4 EXISTING CONDITIONS, THRESHOLDS OF SIGNIFICANCE, ENVIRONMENTAL IMPACTS, AND MITIGATION MEASURES

ENVIRONMENTAL IMPACT REPORT FOCUS

Chapter 4 of the Draft Environmental Impact Report (Draft EIR) contains a discussion of existing conditions, thresholds above which an impact is considered significant, environmental impacts, mitigation measures, and level of significance after mitigation. Issues evaluated in these sections consist of a full range of potential environmental topics originally identified for review in the Notice of Preparation (NOP) of the Draft EIR. An NOP for the Draft EIR was circulated to the public and public agencies on July 18, 2003 for a 30-day public review period. Since that time, elements of the project changed and a revised NOP was circulated on April 26, 2004. A public scoping meeting was held on October 3, 2005 to receive agency and public comments on the scope and content of the EIR. Appendix A contains a copy of the NOP and the Revised NOP and comments received during both review periods and during the public scoping meeting. Each of sections 4.1 through 4.12 of this Draft EIR are organized into the following major components:

- **Environmental Setting:** This subsection presents the existing regional and local environmental conditions relevant to the consideration of project impacts. The applicable regulatory framework, plans, and policies under which the proposed project would be implemented are also discussed in the Environmental Setting component of each section.

- **Thresholds of Significance:** This subsection presents the criteria used to define significant effects on the environment. The criteria are expressed as thresholds, above which the project would have a significant effect on the environment. Thresholds may be quantitative or qualitative, or may be based on agency standards, or legislative or regulatory requirements as related to the impact analysis.

- **Environmental Impacts:** This subsection discusses potential significant effects of the proposed project on the environment, based on whether it violates/exceeds expressed thresholds. Project impacts are numbered sequentially in each section throughout the section. For instance, impacts in Section 4.3 are numbered Impact 4.3-1, Impact 4.3-2, Impact 4.3-3, etc. A **bold** font impact statement precedes the discussion of each impact and provides the summary of each impact and its level of significance.

- **Mitigation Measures:** This subsection provides mitigation measures to reduce significant or potentially significant effects of the proposed project to the extent feasible. State CEQA Guidelines Section 15370 defines mitigation as:

  a. avoiding the impact altogether by not taking a certain action or parts of an action;

  b. minimizing impacts by limiting the degree of magnitude of the action and its implementation;

c. rectifying the impact by repairing, rehabilitating, or restoring the affected environment;

d. reducing or eliminating the impact over time by preservation and maintenance operation during the life of the action; and

e. compensating for the impacts by replacing or providing substitute resources or environments.

The mitigation measures are numbered to correspond with the impact being addressed. For example, Impact 4.3-3 would be mitigated with Mitigation 4.3-3.

- **Level of Significance after Mitigation:** This subsection describes the status of all significant impacts following application of mitigation measures. Either the impact would be reduced to a level below the significance threshold (mitigated to a less-than-significant level) or it would be concluded that feasible mitigation is not available or is insufficient to reduce an impact to less than significant. This would be a "significant unavoidable effect on the environment." If significant unavoidable effects remain, an agency may approve a project, if it finds, pursuant to Public Resources Code (PRC) Section 21081, that overriding benefits of the project outweigh the significant effects.

4.1 LAND USE AND AGRICULTURAL RESOURCES

The purpose of this analysis is to determine potential land use and agricultural resource impacts associated with construction and implementation of the project.

4.1.1 ENVIRONMENTAL SETTING

The project site was operated by the University of California (UC) as an agricultural research facility beginning in the 1920s, remaining in operation until January 2003. Use of the site prior to the UC operations is described in detail in Section 4.11, Cultural Resources, of this Draft EIR. One purpose of the facility was to test the viability and versatility of various pesticides. Over time, residential and commercial areas of the cities of Santa Clara and San Jose developed around the site. The northern property line of the project site is also the city limit line for San Jose. The project site is bordered by one- and two-story single-family detached homes along Forest Avenue, Dorcich Street, Henry Avenue, and multi-story commercial development along Winchester Boulevard. The San Jose lots, located adjacent and north of the project site, are smaller (5,000–6,000 sf) than the other adjacent Santa Clara lots (8,000–10,000 sf).

The project site consists of fallow fields and remnants of decommissioned greenhouses, storage sheds, an office building, and a fruit orchard. Some public improvements including a sidewalk, curb, gutter, and street and traffic lights, are located along the northern edge of the property. The site is surrounded by fencing and utility lines run along the northern property line. Presently, the site is abandoned and only periodically maintained (i.e., vegetation trimmed and mowed) for fire safety.

REGULATORY SETTING

Land use decisions are typically regulated by local agencies through their local planning and development powers. A summary of local land use policies applicable to the project site, as well as policies and goals related to agricultural land uses, are provided below.

LOCAL LAND USE REGULATION

City of Santa Clara General Plan

The Land Use Element of the City of Santa Clara General Plan contains policies and programs to guide land use development in the City's sphere of influence. The Land Use Element also describes and designates land uses in its jurisdiction.

The General Plan designates the project site as moderate-density residential, defined in the GP as:

> "up to 25 dwelling units per acre (du/acre) and 55 persons per acre."

This land use designation would allow development of two-story apartments buildings. Buildings higher than two stories would not be permitted. No more than 35% of the lot may be covered by buildings, and at least 40% of the lot should be landscaped (City of Santa Clara 1992).

In conformance with its Housing Element Inclusionary Policy and as a Condition of Approval for the necessary zoning or subdivision entitlements, the City's requires new developments with 10 or more units to provide at least 10-percent of the total units in the project as affordable below market rate units. In practice, the City requires rental units to be the affordable to very-low or low income households and for-sale ownership units to be affordable to moderate income households.

Zoning Ordinance of the City of Santa Clara

The intent of the City of Santa Clara Zoning Ordinance is to encourage development of a variety of residential, commercial, and industrial developments in designated areas of the City as planned for in the City's General Plan. Further, the zoning ordinance provides standards for development to protect adjacent land uses from one another (City of Santa Clara 1998).

The zoning ordinance designates the project site as "A," or Agricultural Zone District. The intent of this designation is to protect existing agricultural lands, encourage preservation of agricultural lands and provide interim zoning for lands newly annexed to the city (City of Santa Clara 1998). Land uses permitted in this zoning designation include one single-family dwelling unit to support agricultural uses, livestock, farming, ranches, dairies, nurseries, greenhouses, and crop and tree farming.

The City will be considering a zoning amendment to change the site's zoning designation to a Planned Development District. The Planned Development district allows projects to be developed that would be compatible with surrounding land uses, while providing some flexibility in the design and siting of project facilities. Design standards for this district require that the development:

> provide an environment of a stable, desirable character not out of harmony with its surrounding neighborhood. It must meet the most restrictive standards of this ordinance with respect to open space, circulation, density, off-street parking and other conditions pertinent to the proposed use in such a way as to form a harmonious, integrated project of sufficient unity and architectural quality to justify the mixture of normally separated uses or to justify certain exceptions to the normal regulations of this ordinance. These regulations include, but are not limited to the following: height limits, setback requirements, required distances, and buffering between residential and commercial development. (City of Santa Clara 1998).

Further, this designation requires that the number of dwelling units proposed should not exceed the maximum number of dwelling units or maximum lot coverage allowed based on its General Plan land use designation.

As proposed, the project (110 market rate residential units and 165 senior housing units [60% of the total unit count]), qualifies for status as a Density Bonus Project, in accordance with the City's Zoning Ordinance and State law. Section 18.78.010 of the Zoning Ordinance states:

> These Residential Density Bonus Standards are intended, in conjunction with a rezoning to PD – Planned Development and Combining Zoning District (Chapter 18.54), to provide incentives for the construction of housing for very low income, lower income, or senior households in accordance with applicable sections of the California Government Code [Section 65915 et seq.], or successor code. It is the intent of the City to facilitate the development of affordable housing and to implement the goals, objectives, and policies of the City's General Plan Housing Element.

The Density Bonus Standards provide that the developer shall be granted an increase in the allowable density for the site, as stipulated by the General Plan, of up to 25%. The proposed General Plan amendment would allow up to 18 dwelling units per acre. Under the proposed project, the senior housing component, with 165 units on 6 acres, results in a density of 27.5 units per acre on that portion of the site and brings the project density for the approximately 16-acre site (less the 1 acre park dedication) to 17.19 units per acre.

In addition to a density bonus, the development may be granted exception from zoning and design standards of the Zoning Ordinance. In the case of the proposed project (i.e., with senior housing), it is anticipated that zoning exceptions could include building setbacks, building heights, building coverage allowances parking requirements, and right-of-way dimensions. The City could also provide financial incentives to the proposed development by funding, in part, the senior housing project through the City's Redevelopment Agency housing set-aside funds.

AGRICULTURAL RESOURCES REGULATION

California Department of Conservation Farmland Mapping and Monitoring Program

The California Department of Conservation (CDC) sponsors the Farmland Mapping and Monitoring Program (FMMP), which delineates important farmland resources in the state based on a particular set of criteria related primarily to soil type and the availability of water. Farmland that meets the specified criteria is placed in one of four main categories: Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance (CDC 2001).

The CDC classifies a portion of the project site as Prime Farmland and the remainder as Farmland of Statewide Importance (CDC 2001). Prime Farmland is defined by CDC as "the best combination of physical and chemical features to sustain long-term agricultural production. This land has the soil quality, growing season, and moisture supply needed to produce sustained high yields" (CDC 2001). Farmland of Statewide Importance is defined by CDC as "Farmland similar to Prime Farmland but with minor shortcomings, such as greater slopes or less ability to store soil moisture" (CDC 2001). Based on conversations with FMMP

staff, the specific delineation of Prime versus Statewide Important Farmlands on the project site cannot be determined with any certainty based on available data and maps (Vink, pers. comm., 2003). Therefore, for the purposes of this analysis the entire site is considered Prime Farmland.

CDC is also responsible for establishing agricultural easements in accordance with Public Resources Code Sections 10250–10255. Site selection criteria include the expected future use of the site, the commitment of the local jurisdiction to protecting agricultural resources, and the likelihood that the land would be converted to non-agricultural uses. Based on conversations with FMMP staff, the project site would not meet conservation easement eligibility requirements (Vink, pers. comm., 2003).

Williamson Act

The California Land Conservation Act of 1965, commonly referred to as the Williamson Act, is the State of California's principal method for encouraging the preservation of agricultural lands. The Williamson Act enables local governments to enter into contracts with private landowners who agree to maintain specified parcels of land in agricultural or related open space use in exchange for tax benefits. The project site is not under a Williamson Act contract.

4.1.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in significant land use or agricultural impacts if it would:

- conflict with applicable land use plans, policies, or regulations of an agency with jurisdiction over the project adopted for the purpose of avoiding or mitigating an environmental effect;
- conflict with adjacent land uses;
- physically divide an established community;
- convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the FMMP of the California Resources Agency, to non-agricultural use;
- conflict with existing zoning for agricultural use, or a Williamson Act contract; or
- involve other changes in the existing environment which, due to their location or nature, could result in conversion of farmland, to non-agricultural use.

IMPACT ANALYSIS

Impact 4.1-1

Conflict with Adjacent Land Uses. *The project would develop the site with residential development that is compatible with existing surrounding residential and commercial areas (i.e., detached single-family residential and retail development). The project would not conflict with adjacent land uses. This would be a less-than-significant impact.*

Conversion of approximately 17 acres of land previously used for agricultural research purposes to urban residential uses (i.e., senior housing, single-family residential homes, and park uses) would occur as a result of the project. The project site is surrounded by single-family residential and commercial development, and is designated for residential uses in the General Plan. No other agricultural lands are located in the vicinity of the project site. In general, the project would result in infill residential development in a primarily residential area of the City. A zoning amendment is proposed to change the zoning designation to Planned Development District. This zoning designation requires that the development project be compatible with surrounding development. Because the project would construct residential land uses that are compatible with surrounding land uses (i.e., residential and commercial), development of the project would not conflict with adjacent land uses. This would be a less-than-significant impact.

Impact 4.1-2

Conversion of Farmland to Non-Agricultural Use. *The project would involve development of Prime Farmland and Farmland of Statewide Importance with residential land uses. Conversion of farmland to urban uses would be a significant impact.*

The CDC classifies the site as Prime Farmland and Farmland of Statewide Importance. Remnants of fruit orchards are found on the site. No other important Farmlands or agricultural lands are located in the project vicinity and the city has no adopted policies for the protection of farmland resources. Agricultural operations at the site ceased in January 2003. Although the project site is not in active agricultural production, the project site is still considered to be a farmland resource because of the presence of suitable soils; however, it is likely that this parcel would not be economically feasible to farm because of its proximity to urban development and the limited size of the site. The project would result in the conversion of prime and important farmlands to non-agricultural uses. This would be a significant impact.

Impact 4.1-3

Physical Division of an Established Community. *The project would not physically divide an established community. Activities at the former research center predate the surrounding neighborhoods. With the project as proposed, the site and its amenities (parks and open space) would be accessible to surrounding residents, allowing the property to be integrated into the neighborhood. This would be a beneficial impact of the project.*

The project would not physically divide an established community. Activities at the former research center predate the surrounding neighborhood. Presently, public access to the site is prohibited because the site is fenced and secured to prevent trespassers from gaining access to

the site. With the project, new residences, a park, and open space areas would be developed onsite. Residents from surrounding neighborhoods could access the project site and its amenities (parks and open space areas) from Winchester Boulevard. Pedestrian access would be provided from Forest Avenue and would be provided throughout the site via north/south and east/west pedestrian corridors. As a result, the formerly inaccessible site would become integrated into the surrounding neighborhood. Because the project would provide greater access to the project site and proposed amenities, this would be a beneficial impact.

Impact 4.1-4

Conflict with Applicable Plans and Policies. *The project would be consistent with the General Plan land use designation, but inconsistent with the zoning ordinance. This inconsistency is a land use regulation issue rather than a physical environmental consequence of the project. Therefore, this would not be a significant effect under CEQA. Further, a General Plan and zoning amendment are proposed to make land uses, zoning, and general plan designations consistent with each other. This would be a less-than-significant impact.*

The project site is currently designated moderate-density residential in the City's General Plan and "A" Agricultural Zone District by the City's Zoning Ordinance. The General Plan would allow the development of up to 425 dwelling units on the project site. The project proposes to only develop 110 single-family residences and 165 senior housing units (total of 275 units). The project would be consistent with the site's General Plan land use designation.

The site's "A" zoning designation would allow only one single-family residence associated with agricultural operations, therefore, the proposed project and development option would be inconsistent with this zoning designation. This inconsistency relates to a land use regulation issue, where existing zoning has not been updated to conform to current General Plan designations, rather than a physical environmental consequence of the project. Therefore, it does not constitute a significant environmental effect under CEQA.

The proposed zoning amendment would change the site's zoning designation to Planned Development District. The proposed zoning would allow the development of residential land uses as long as their density and unit size are similar to existing surrounding residential uses. The project and development option involves development of single-family residences that range in size from 1,500 to 3,000 square feet and would be no more than two stories tall. This development would not conflict with the proposed zoning designation. The senior housing facilities would be located along Winchester Boulevard and the southeast property line and would be up to four stories tall. The size and intensity of these facilities would be similar to adjacent commercial development, (e.g., parking garage and shopping mall). The proposed General Plan amendment would allow up to 18 dwelling units per acre. The project (110 single-family units and 165 senior housing units) would result in a project density of approximately 17 units per acre. Further, density bonus standards for affordable housing developments in the City's zoning ordinance would allow an increase in allowable density onsite by 25%. The project would not exceed the density bonus allowance. With the proposed zoning amendment the proposed land uses, zoning, and General Plan designation would be consistent with each other. Therefore, this would be a less-than-significant impact.

4.1.3 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

4.1-1: Compatibility with Adjacent Land Uses.

4.1-3: Physical Division of an Established Community.

4.1-4: Conflict with Applicable Plans and Policies.

No feasible mitigation measures are available for the following significant impact.

4.1-2: Conversion of Farmland to Non-agricultural Use.

Large- or small-scale agricultural operations in Santa Clara County would not be economically viable in the long run because of many factors including: high land prices, which in turn creates high property taxes, increasing local and state regulations, high water and labor costs, competition in the agriculture market by foreign and other state areas, and the presence of predominantly urban land uses in the surrounding neighborhood. Further, the project site is designated by the General Plan for residential development and the City's Housing Element identifies the project site as an important opportunity for housing (City of Santa Clara 2002). Retention of the site in agricultural uses could impede the City from achieving its housing goals.

Currently, there are 156 acres of undeveloped land in the City of which 116 have approved office and commercial development projects. The remaining 23 acres, (40 acres minus the 17-acre project site) are planned for commercial and industrial/mixed use development and would not provide suitable soils for agricultural production. Because no other farmland resources are located in the city or surrounding areas that are not being developed, or are not already planned for development, no farmland areas are available to preserve or grant easements to protect their farmland status, which is an important consideration for determining mitigation feasibility under CEQA (Defend the Bay vs. City of Irvine 119 CA4 1261; 15 CR 3d 76). Based on the above evidence, this Draft EIR has determined that no feasible measures are available to mitigate the loss of prime farmland or the conversion of farmland to non-agricultural uses.

4.1.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With the exception of impacts to farmland, the project's land use impacts would be less than significant (Impacts 4.1-1, 4.1-3, and 4.1-4.)

There are no feasible mitigation measures available to reduce the project's important farmland impacts (Impact 4.1-2). Therefore this impact would be a significant and unavoidable impact of the project.

4.2 VISUAL RESOURCES

The purpose of this analysis is to determine potential visual impacts associated with construction and implementation of the project. The project's nighttime lighting impacts were determined to be less than significant and are not evaluated further in this section (see Section 1.3.3 of this Draft EIR).

4.2.1 ENVIRONMENTAL SETTING

The project site is a relatively undeveloped 17-acre (approximate) parcel of land surrounded by residential and commercial uses. It consists of fallowed agricultural land and a few associated buildings (e.g., greenhouses, sheds, office).

In general, the project site is one of the last remaining undeveloped parcels in a heavily urbanized area. Because of surrounding developed land uses and visual screening provided by tall vegetation along Winchester Boulevard, it is not a visually prominent feature in the local area. Further, it is not accessible by the public. A large commercial shopping complex is located across Winchester Boulevard, east of the project site. No scenic resources (e.g., rock outcroppings, streams, or significant historic buildings along a State scenic highway) are located on the project site. The project site is not located in the City's local registry of historic resources (Impacts to Cultural Resources are discussed further in Section 4.11, Cultural Resources). Further, it is not identified as a scenic vista by the City of Santa Clara General Plan and the City does not have a viewshed protection ordinance. As such, these issues are not evaluated further in this section.

Public views of the site are limited to viewpoints along Winchester Boulevard and through a 100-foot section of chainlink fence on Forest Avenue. Travelers along Winchester Boulevard have limited views of the driveway entrance near the northeast corner of the property. Nearly all of the views along Winchester Boulevard are obscured by fencing and dense, tall vegetation. In general, drivers traveling north and south along Winchester Boulevard would see the entrance gate and frontage fencing. Public views of the site are available from the neighborhood at the chainlink fence on Forest Avenue. Stands of trees are visible in the near-ground view, with fallow agricultural lands and former agricultural buildings visible in the distance.

A majority of the private residences that abut the site have limited views of the open, fallowed fields on the project site, because views immediately across their rear property line are blocked by rear-yard fencing, existing landscaping, and lack of a second story. Most of the fencing surrounding the project site is at least 6 feet tall and provides a solid visual barrier for ground-level views of the site. Some residences with chainlink fencing as their property barrier have direct views of the project site from their back yards. A limited number of two-story homes are located along the perimeter of the property. The second story of these homes have open views of the project site, which generally consist of fallow fields and decommissioned agricultural research center buildings.

REGULATORY SETTING

Scenic Highway System

The California Department of Transportation (Caltrans) administers the California Scenic Highway Program. The goal of the program is to preserve and protect scenic highway corridors from change that would affect the aesthetic value of the land adjacent to highways. There are no scenic highways in the vicinity of the project area.

City of Santa Clara

The City of Santa Clara General Plan has adopted polices that include recommendations for the siting of buildings in relation to scenic resources and existing development (specifically bulk, height, and setback). Once the project is approved, the applicants would submit plans of their development to the City Planning Department for Design Review. During Design Review, the Planning Department and architectural committee would evaluate the merits of the project (i.e., design, siting), and determine the project's consistency with development standards.

4.2.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project's visual impacts would be significant if it would:

- have a substantial adverse effect on a scenic vista;
- substantially damage scenic resources, including, but not limited to trees, rock outcroppings, and historic buildings along a state scenic highway;
- substantially degrade the existing visual character or quality of the site and its surroundings; or
- result in substantial degradation of a substantial number of public views.

IMPACT ANALYSIS

Impact 4.2-1

Impacts to Visual Character of the Site and Surrounding Area. *The project would change the site from undeveloped open space and decommissioned agricultural facilities to a residential development. The project would result in residential development with design elements that are similar to surrounding neighborhoods (i.e., single-family homes with front/back yards, residential roadways). The proposed senior housing facility would be similar in height (50 to 60 feet tall) and size to existing buildings along Winchester Boulevard (e.g., Valley Fair Mall and Santana Row). Publicly accessible views of the project site would not be substantially degraded from Winchester Boulevard because the visual character of the proposed uses would be similar to the surrounding uses. Although the public neighborhood view through the fence on Forest Drive and the private, backyard and second-story views of the existing fallowed fields would be*

eliminated, the post-project appearance of the site would be consistent with the existing visual character of the neighborhood. This would be a less-than-significant impact.

The project site is not located along a scenic highway and is not located adjacent to any visually important scenic resources (e.g., vistas, streams, or rock outcroppings). The project site is surrounded by residential and commercial development in a heavily urbanized area of the city. Although the existing site provides open space in the urban setting, it is not accessible as a visual open-space resource to the general public and is not a visually prominent site (i.e., it is not a view that attracts drivers or passers-by). Instead, it is a view that is largely screened from the public by surrounding residential uses and landscaping.

The project would convert the fallowed agricultural fields to urban land uses. The proposed land uses (single-family residential, senior housing, and parks) would be similar in character to surrounding residential development and would include similar features (e.g., front/back yards, roadways). In general, the project would result in infill residential development in a predominantly residential area of the city.

Public views of the development would be limited to viewpoints along Winchester Boulevard and the emergency access driveway along Forest Avenue. In general, views of the project from Forest Avenue would be similar to the appearance of the surrounding residential community and would include rows of homes on streets, with alleys and roadways connecting these areas. The existing fencing and vegetation along Winchester Boulevard would be removed. Views of the project site from Winchester Boulevard would include a new roadway and associated landscaping and a four-story, senior housing facility. This development would be approximately 50–60 feet tall, similar to the size and massing of nearby commercial shopping center buildings. The visual character of the project area would not substantially change from existing conditions, because commercial and residential uses at densities similar to the proposed project are present near the site. The project would be compatible with the urbanized character of the project area.

An effect on private views is a potential source of environmental impact, which a lead agency may choose to consider in accordance with recent CEQA case law (Mira Mar Mobile Community et al. v. City of Oceanside, May 17, 2004; Ocean View Estates Homeowners Association v. Montecito Water District, March 2, 2004). Views from some private residences abutting the project site (i.e., those residences that are two-stories tall, or that have open chain-link fencing) would change with implementation of the project. Adjacent residences that are single story and have solid perimeter fencing would not have direct views of the project site, but may have views of the upper story and rooflines of the proposed perimeter housing units and landscape trees above their rear fences. Where adjacent residences would have direct views of the project site (i.e., adjacent two-story homes or residences with chain link fencing), private rear-yard views would be changed from open fields to a residential neighborhood. The project includes several design elements to minimize effects on available private views of the project site including providing 6-foot-tall wood fencing, establishing 15-foot minimum building setbacks from the perimeter fencing, locating large lots along the perimeter of the

project site, and development of the site at reduced densities compared to what is allowed under the General Plan.

Some residences would have rear yard views of the senior housing facility. The senior housing facility would be located more than 80 feet from the rear perimeter of the nearest residences. Residential views of multi-story development area common along Winchester Boulevard and in other residential areas of the city.

Private views of the site after development would be similar to views typical of other residential neighborhood in other parts of the city with single-family homes in the interior of the site and larger buildings along Winchester Boulevard. Further, the city's zoning ordinance allows the construction of two-story homes in the adjacent neighborhood and does not require the construction of fencing between single family lots. Private views would not be substantially degraded by the project because it would fill in and continue the visual character of the surrounding residential neighborhood, similar to existing nearby areas and consistent with allowed uses under the zoning ordinance. The precise design of proposed homes next to existing homes is an important planning issue that would be addressed during architectural review by the City.

The City's Architectural Review process has been put in place to encourage the orderly and harmonious appearance of structures and properties; maintain the public health, safety and welfare; maintain property and improvement values throughout the City and encourage physical development of the City as intended by the General Plan. Architectural Review is the responsibility of the Architectural Committee or Director of Planning and Inspection, as designated. In order to grant architectural approval, the findings and determinations of the Architectural Committee must be that the design and location of the proposed development is such that it is in keeping with the character of the neighborhood and will not be detrimental to harmonious development as specified by the Zoning Ordinance and the General Plan of the City.

From a CEQA perspective locating new single-family homes on an infill parcel next to existing single-family homes would be a less-than-significant aesthetic impact.

4.2.3 MITIGATION MEASURES

No mitigation is necessary for the following less-than-significant impact.

4.2-1: Impacts to Existing Visual Character.

4.2.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's visual impact (Impact 4.2-1) would be less than significant. No mitigation is required.

4.3 AIR QUALITY

This section includes a discussion of existing air-quality conditions, a summary of applicable regulations, and an analysis of potential short-term and long-term air-quality impacts related to the construction and operation of the project, and clean-up and removal of contaminated soils on the project site.

4.3.1 ENVIRONMENTAL SETTING

Ambient concentrations of air-pollutant emissions are determined by the amount of emissions released by air-pollutant sources and the atmosphere's ability to transport and dilute such emissions. Natural factors that affect transport and dilution include terrain, wind, atmospheric stability, and the presence of sunlight. Therefore, existing air-quality conditions in the area are determined by such natural factors as topography, meteorology, and climate, in addition to the amount of emissions released by existing air-pollutant sources, as discussed separately below.

CLIMATE AND METEOROLOGY

The following section describes pertinent characteristics of the local air basin and provides an overview of the physical conditions affecting pollutant dispersion in the project area.

Regional Climate

The project site is located in the southern portion of the Bay Area Basin (Basin), an area encompassing all of Marin, Napa, Contra Costa, Alameda, Santa Clara, San Mateo, San Francisco, and parts of Sonoma and Solano counties. The Basin is characterized by complex terrain consisting of coastal mountain ranges, inland valleys, and the San Francisco Bay. The Basin is generally bounded on the west by the Pacific Ocean, on the north by the Coast Ranges, and on the east and south by the Diablo Range.

The climate is dominated by the strength and location of a semi-permanent, subtropical high-pressure cell over the northeastern Pacific Ocean. Climate is also affected by the moderating effects of the adjacent oceanic heat reservoir. Mild summers and winters, moderate rainfall, daytime onshore breezes, and moderate humidity characterize regional climatic conditions. In summer, when the high-pressure cell is strongest and farthest north, fog forms in the morning and temperatures are mild. In winter, when the high-pressure cell is weakest and farthest south, occasional rainstorms occur.

Meteorological Influences on Air Quality

Regional flow patterns affect air quality patterns by directing pollutants downwind of sources. Localized meteorological conditions, such as moderate winds, disperse pollutants and reduce pollutant concentrations. When a warm layer of air traps cooler air close to the ground, an inversion layer is produced. Such temperature inversions hamper dispersion by creating a ceiling over the area and trapping air pollutants near the ground. During summer mornings and afternoons, these inversions are present in the project area. During summer's longer

daylight hours, plentiful sunshine provides the energy needed to fuel photochemical reactions between nitrogen oxides (NO_X) and reactive organic gases (ROG), which result in ozone formation.

In the winter, temperature inversions dominate during the night and early morning hours but frequently dissipate by afternoon. At this time, the greatest pollution problems are from carbon monoxide (CO) and NO_X. High CO concentrations occur on winter days with strong surface inversions and light winds. CO transport is extremely limited.

EXISTING AIR QUALITY-CRITERIA AIR POLLUTANTS

Air-quality regulations focus on the following air pollutants: ozone, CO, nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter (PM), and lead. Because these are the most prevalent air pollutants known to be deleterious to human health and extensive health-effects criteria documents are available, these pollutants are commonly referred to as "criteria air pollutants." Concentrations of these criteria-air-pollutants are used as indicators of ambient-air-quality conditions. A brief description of each criteria air pollutant including source types, and health effects is provided below along with the most current attainment area designations and monitoring data for the project study area.

Ozone

Ozone is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight, and the primary component of smog. Ozone is not directly emitted into the air, but is formed through complex chemical reactions between precursor emissions of ROG and NO_X in the presence of sunlight. ROG are volatile organic compounds that are photochemically reactive. ROG emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_X are a group of gaseous compounds of nitrogen and oxygen that results from the combustion of fuels.

Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provide the optimum conditions for formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. Therefore, ozone is a regional pollutant that often affects large areas. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry (Godish 1991).

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 parts per million for 1–2 hours has been

found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes, and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in the permeability of respiratory epithelia; such increased permeability leads to an increase in responsiveness of the respiratory system to challenges, and the interference or inhibition of the immune system's ability to defend against infection (Godish 1991). Emissions of ozone precursors ROG and NO_X have decreased over the past several years because of more stringent motor vehicle standards and cleaner burning fuels.

Carbon Monoxide

CO is a colorless, odorless, and poisonous gas produced by incomplete burning of carbon in fuels, primarily from mobile (transportation) sources. In fact, 77% of the nationwide CO emissions are from mobile sources. The other 23% consist of CO emissions from wood-burning stoves, incinerators, and industrial sources.

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (U.S. Environmental Protection Agency 2006).

The highest concentrations are generally associated with cold, stagnant weather conditions that occur during the winter. In contrast to ozone, which tends to be a regional pollutant, CO problems tend to be localized.

Nitrogen Dioxide

NO_2 is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO_2 are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal-combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO_2 (U.S. Environmental Protection Agency 2006). The combined emissions of NO and NO_2 are referred to as NO_X, which are reported as equivalent NO_2. Because NO_2 is formed and depleted by reactions associated with photochemical smog (ozone), the NO_2 concentration in a particular geographical area may not be representative of the local NO_X emission sources.

Inhalation is the most common route of exposure to NO_2. Because NO_2 has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, including

coughing, difficulty with breathing, vomiting, headache, and eye irritation, during or shortly after exposure. After a period of approximately 4–12 hours, an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO_2 intoxication after acute exposure has been linked on occasion with prolonged respiratory impairment, with such symptoms as chronic bronchitis and decreased lung functions.

Sulfur Dioxide

SO_2 is produced by such stationary sources as coal and oil combustion, steel mills, refineries, and pulp and paper mills. The major adverse health effects associated with SO_2 exposure pertain to the upper respiratory tract. SO_2 is a respiratory irritant with constriction of the bronchioles occurring with inhalation of SO_2 at 5 ppm or more. On contact with the moist mucous membranes, SO_2 produces sulfurous acid, which is a direct irritant. Concentration rather than duration of the exposure is an important determinant of respiratory effects. Exposure to high SO_2 concentrations may result in edema of the lungs or glottis and respiratory paralysis.

Particulate Matter

Respirable particulate matter with an aerodynamic diameter of 10 micrometers or less is referred to as PM_{10}. PM_{10} consists of particulate matter emitted directly into the air, such as fugitive dust, soot, and smoke from mobile and stationary sources, construction operations, fires, and natural windblown dust, and particulate matter formed in the atmosphere by condensation and/or transformation of SO_2 and ROG (U.S. Environmental Protection Agency 2006). $PM_{2.5}$ includes a subgroup of finer particles that have an aerodynamic diameter of 2.5 micrometers or less (California Air Resources Board 2005a).

The adverse health effects associated with PM_{10} depend on the specific composition of the particulate matter. For example, health effects may be associated with metals, polycyclic aromatic hydrocarbons (PAH), and other toxic substances adsorbed onto fine particulate matter (which is referred to as the "piggybacking effect"), or with fine dust particles of silica or asbestos. Generally, adverse health effects associated with PM_{10} may result from both short-term and long-term exposure to elevated concentrations and may include breathing and respiratory symptoms, aggravation of existing respiratory and cardiovascular diseases, alterations to the immune system, carcinogenesis, and premature death (U.S. Environmental Protection Agency 2006). $PM_{2.5}$ poses an increased health risk because the particles can deposit deep in the lungs and contain substances that are particularly harmful to human health.

Lead

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed in detail below, metal processing is currently the primary source of lead emissions. The highest levels of lead in air are generally found near

lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers.

Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, the U.S. Environmental Protection Agency (EPA) set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (U.S. Environmental Protection Agency 2006).

All areas of the state are currently designated as attainment for the State lead standard (EPA does not designate areas for the national lead standard). Although the ambient lead standards are no longer violated, lead emissions from stationary sources still pose "hot spot" problems in some areas.

Monitoring Station Data and Attainment Area Designations

Criteria-air-pollutant concentrations are measured at several monitoring stations in the Basin. The San Jose-Jackson Street, San Jose-Piedmont Street and Sunnyvale-Ticonderoga monitoring stations are the closest to the project study area with recent data for ozone, CO, PM_{10}, and $PM_{2.5}$. In general, the ambient-air-quality measurements from these stations are representative of the air quality in the vicinity of the project study area. Table 4-1 summarizes the air- quality data from the most recent 3 years.

Table 4-1
Summary of Annual Ambient-Air-Quality Data (2003–2005)

	2003	2004	2005
OZONE			
San Jose-Jackson Street Monitoring Station			
Maximum concentration (1-hr/8-hr average, ppm)	0.119/0.082	0.090/0.068	0.113/0.080
Number of days State standard exceeded (1-hr)	4	0	1
Number of days national 1-hr/8-hr standard exceeded	0/0	0/0	0/0
San Jose-935 Piedmont Road Monitoring Station			
Maximum concentration (1-hr/8-hr average, ppm)	0.104/0.070	0.093/0.074	0.110/0.083
Number of days State standard exceeded (1-hr)	2	0	1
Number of days national 1-hr/8-hr standard exceeded	0/0	0/0	0/0
Sunnyvale-910 Ticonderoga Monitoring Station			
Maximum concentration (1-hr/8-hr average, ppm)	0.113/0.086	0.102/0.081	0.097/0.073
Number of days State standard exceeded (1-hr)	4	1	1
Number of days national 1-hr/8-hr standard exceeded	0/2	0/0	0/0

Table 4-1 Summary of Annual Ambient-Air-Quality Data (2003–2005)			
	2003	2004	2005
CARBON MONOXIDE			
San Jose-Jackson Street Monitoring Station			
Maximum concentration (1-hr/8-hr average, ppm)	5.5/4.04	4.4/2.96	3.9/2.86
Number of days State standard exceeded (8-hr)	0	0	0
Number of days national standard exceeded (1-hr/8-hr)	0/0	0/0	0/0
FINE PARTICULATE MATTER ($PM_{2.5}$)			
San Jose-Jackson Street Monitoring Station			
Maximum concentration ($\mu g/m^3$)	56.1	51.5	47.9
Number of days national standard exceeded (measured[1])	0	0	0
San Jose-Tully Road Monitoring Station			
Maximum concentration ($\mu g/m^3$)	51.7	44.9	41.7
Number of days national standard exceeded (measured[1])	0	0	0
RESPIRABLE PARTICULATE MATTER (PM_{10})			
San Jose-Jackson Street Monitoring Station			
Maximum concentration ($\mu g/m^3$)	56.8	55.4	47.1
Number of days State standard exceeded (measured/calculated[1])	3/18.3	4/24.5	0/0
Number of days national standard exceeded (measured/calculated[1])	0/0	0/0	0/0

Notes: $\mu g/m^3$ = micrograms per cubic meter; ppm = parts per million

[1] Measured days are those days that an actual measurement was greater than the level of the State daily standard or the national daily standard. Measurements are typically collected every 6 days. Calculated days are the estimated number of days that a measurement would have been greater than the level of the standard had measurements been collected every day. The number of days above the standard is not necessarily the number of violations of the standard for the year.

Source: California Air Resources Board 2006, U.S. Environmental Protection Agency 2006.

Both the California Air Resources Board (ARB) and EPA use this type of monitoring data to designate areas according to their attainment status for criteria air pollutants. The purpose of these designations is to identify those areas with air-quality problems and thereby initiate planning efforts for improvement. The three basic designation categories are "nonattainment," "attainment," and "unclassified." "Unclassified" is used in an area that cannot be classified on the basis of available information as meeting or not meeting the standards. In addition, the California designations include a subcategory of the nonattainment designation, called "nonattainment-transitional." The nonattainment-transitional designation is given to nonattainment areas that are progressing and nearing attainment. The most current attainment designations for Santa Clara County are shown in Table 4-2 for each criteria air pollutant.

Table 4-2
Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards [1]		
		Standards [2,3]	Attainment Status (Santa Clara County) [6]	Primary [3,5]	Secondary [3,6]	Attainment Status (Santa Clara County) [7]
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	N (Serious)	0.12 ppm[9] (235 µg/m^3)	Same as Primary Standard	N[9]
	8-hour	0.070 ppm[8]	–	0.08 ppm (157 µg/m^3)		N (Marginal)
Carbon Monoxide (CO)	1-hour	20 ppm (23 mg/m^3)	A	35 ppm (40 mg/m^3)	–	U/A
	8-hour	9 ppm (10 mg/m^3)		9 ppm (10 mg/m^3)		
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	–	–	0.053 ppm (100 µg/m^3)	Same as Primary Standard	U/A
	1-hour	0.25 ppm (470 µg/m^3)	A	–		–
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	–	–	0.030 ppm (80 µg/m^3)	–	U
	24-hour	0.04 ppm (105 µg/m^3)	A	0.14 ppm (365 µg/m^3)	–	
	3-hour	–	–	–	0.5 ppm (1300 µg/m^3)	
	1-hour	0.25 ppm (655 µg/m^3)	A	–	–	–
Respirable Particulate Matter (PM_{10})	Annual Arithmetic Mean	20 µg/m^3	N	50 µg/m^3 [6]	Same as Primary Standard	A
	24-hour	50 µg/m^3		150 µg/m^3 [6]		
Fine Particulate Matter ($PM_{2.5}$)	Annual Arithmetic Mean	12 µg/m^3	N	15 µg/m^3	Same as Primary Standard	U
	24-hour	–	–	65 µg/m^3		

Table 4-2
Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards [1]		
		Standards [2,3]	Attainment Status (Santa Clara County) [6]	Primary [3,5]	Secondary [3,6]	Attainment Status (Santa Clara County) [7]
Lead [10]	30-day Average	1.5 µg/m^3	A	–	–	–
	Calendar Quarter	–	–	1.5 µg/m^3	Same as Primary Standard	A
Sulfates	24-hour	25 µg/m^3	A	**No National Standards**		
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	U			
Vinyl Chloride[10]	24-hour	0.01 ppm (26 µg/m^3)	U/A			
Visibility-Reducing Particle Matter	8-hour	Extinction coefficient of 0.23 per kilometer — visibility of 10 miles or more (0.07—30 miles or more for Lake Tahoe) because of particles when the relative humidity is less than 70%.	U			

[1] National standards (other than ozone, PM, and those based on annual averages or annual arithmetic means) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. The PM10 24-hour standard is attained when 99% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. The PM2.5 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact the EPA for further clarification and current federal policies.

[2] California standards for ozone, CO (except Lake Tahoe), SO2 (1- and 24-hour), NO2, PM, and visibility-reducing particles are values that are not to be exceeded. All others are not to be equaled or exceeded. CAAQS are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.

[3] Concentration expressed first in units in which it was promulgated [i.e., parts per million (ppm) or micrograms per cubic meter (µg/m^3)]. Equivalent units given in parentheses are based upon a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.

[4] Unclassified (U): a pollutant is designated unclassified if the data are incomplete and do not support a designation of attainment or nonattainment.

Attainment (A): a pollutant is designated attainment if the state standard for that pollutant was not violated at any site in the area during a 3-year period.

Nonattainment (N): a pollutant is designated nonattainment if there was a least one violation of a state standard for that pollutant in the area.

Nonattainment/Transitional (NT): is a subcategory of the nonattainment designation. An area is designated nonattainment/transitional to signify that the area is close to attaining

Table 4-2
Ambient Air Quality Standards and Designations

Pollutant	Averaging Time	California		National Standards [1]		
		Standards [2, 3]	Attainment Status (Santa Clara County) [6]	Primary [3,5]	Secondary [3,6]	Attainment Status (Santa Clara County) [7]

the standard for that pollutant.

[5] National Primary Standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.

[6] National Secondary Standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.

[7] Nonattainment (N): any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national primary or secondary ambient air quality standard for the pollutant.

Attainment (A): any area that meets the national primary or secondary ambient air quality standard for the pollutant.

Unclassifiable (U): any area that cannot be classified on the basis of available information as meeting or not meeting the national primary or secondary ambient air quality standard for the pollutant.

[8] This concentration was approved by the ARB on April 28, 2005 and is expected to become effective in early 2006.

[9] The 1-hour ozone NAAQS was revoked on June 15, 2005.

[10] ARB has identified lead and vinyl chloride as toxic air contaminants with no threshold of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.

Sources: California Air Resources Board 2006, U.S. Environmental Protection Agency 2006

EXISTING AIR QUALITY-TOXIC AIR CONTAMINANTS

Concentrations of toxic air contaminants (TACs) are also used as indicators of ambient-air-quality conditions. A TAC is defined as an air pollutant that may cause or contribute to an increase in mortality or in serious illness, or that may pose a hazard to human health. TACs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations.

According to the *2005 California Almanac of Emissions and Air Quality* (California Air Resources Board 2005a), the majority of the estimated health risk from TACs can be attributed to relatively few compounds, the most important being PM from diesel-fueled engines (diesel PM). Diesel PM differs from other TACs in that it is not a single substance, but rather a complex mixture of hundreds of substances. Although diesel PM is emitted by diesel-fueled internal-combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present. Unlike the other TACs, no ambient monitoring data are available for diesel PM because no routine measurement method currently exists. However, ARB has made preliminary concentration estimates based on a PM exposure method. This method uses the ARB emissions inventory's PM_{10} database, ambient PM_{10} monitoring data, and the results from several studies on chemical speciation to estimate concentrations of diesel PM. Of the TACs for which data are available in California, diesel PM, benzene, 1,3-butadiene, acetaldehyde, carbon tetrachloride, hexavalent chromium, para-dichlorobenzene, formaldehyde, methylene chloride, and perchloroethylene pose the greatest existing ambient risks.

REGULATORY BACKGROUND-CRITERIA AIR POLLUTANTS

Air quality in Santa Clara County is regulated by such agencies as the EPA, ARB, and the Bay Area Air Quality Management District (BAAQMD). Each of these agencies develops rules, regulations, policies, and/or goals to comply with applicable legislation. Although EPA regulations may not be superseded, both state and local regulations may be more stringent.

Federal Air Quality Regulations

At the federal level, EPA has been charged with implementing national air quality programs. EPA's air quality mandates are drawn primarily from the federal Clean Air Act (CAA), which was enacted in 1970. The most recent major amendments to the CAA were made by Congress in 1990.

The CAA required the EPA to establish primary and secondary National ambient air quality standards (NAAQS) (Table 4-2). The CAA also required each state to prepare an air quality control plan referred to as a State Implementation Plan (SIP). The federal Clean Air Act Amendments of 1990 (CAAA) added requirements for states with nonattainment areas to revise their SIPs to incorporate additional control measures to reduce air pollution. The SIP is periodically modified to reflect the latest emissions inventories, planning documents, and rules and regulations of the air basins as reported by their jurisdictional agencies. The EPA has

responsibility to review all state SIPs to determine conformation to the mandates of the CAA, and the amendments thereof, and determine if implementation will achieve air quality goals. If the EPA determines a SIP to be inadequate, a Federal Implementation Plan (FIP) may be prepared for the nonattainment area that imposes additional control measures. Failure to submit an approvable SIP or to implement the plan within the mandated timeframe may result in sanctions being applied to transportation funding and stationary air pollution sources in the air basin.

State Air Quality Regulations

The ARB is the agency responsible for coordination and oversight of state and local air pollution control programs in California and for implementing the California Clean Air Act (CCAA). The CCAA, which was adopted in 1988, required the ARB to establish California ambient air quality standards (CAAQS) (Table 4-2). The CCAA requires that all local air districts in the state endeavor to achieve and maintain the CAAQS by the earliest practical date. The act specifies that local air districts should focus particular attention on reducing the emissions from transportation and area-wide emission sources, and provides districts with the authority to regulate indirect sources.

Other ARB responsibilities include, but are not limited to, overseeing local air district compliance with California and federal laws, approving local air quality plans, submitting SIPs to the EPA, monitoring air quality, determining and updating area designations and maps, and setting emissions standards for new mobile sources, consumer products, small utility engines, off-road vehicles, and fuels.

Bay Area Air Quality Management District Requirements

BAAQMD attains and maintains air-quality conditions in Santa Clara County through a comprehensive program of planning, regulation, enforcement, technical innovation, and promotion of the understanding of air-quality issues. The clean-air strategy of BAAQMD includes the preparation of plans and programs for the attainment of ambient-air-quality standards, adoption and enforcement of rules and regulations, and issuance of permits for stationary sources. BAAQMD also inspects stationary sources, responds to citizen complaints, monitors ambient air quality and meteorological conditions, and implements other programs and regulations required by the CAA, CAAA, and CCAA.

In an effort to reach attainment of the state and national ozone standards, the BAAQMD prepared the Bay Area 2000 Clean Air Plan (CAP) and the 2001 Ozone Attainment Plan (OAP). More recently, the BAAQMD, in cooperation with the Metropolitan Transportation Commission (MTC) and the Association of Bay Area Governments (ABAG), has prepared the Bay Area 2005 Ozone Strategy. The Ozone Strategy is a roadmap showing how the Basin will achieve compliance with the State one-hour air quality standard for ozone as expeditiously as practicable and how the region will reduce transport of ozone and ozone precursors to neighboring air basins (BAAQMD 2006).

REGULATORY BACKGROUND-TOXIC AIR CONTAMINANTS

Air-quality regulations also focus TACs, or in federal parlance, hazardous air pollutants (HAPs). In general, for those TACs that may cause cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts may not be expected to occur. This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and for which the ambient standards have been established (Table 4-2). Instead, EPA and ARB regulate HAPs and TACs, respectively, through statutes and regulations that generally require the use of the maximum or best available control technology for toxics (MACT and BACT) to limit emissions. These statutes and regulations, in conjunction with additional rules set forth by BAAQMD, establish the regulatory framework for TACs.

Federal Programs for Hazardous Air Pollutants

EPA has programs for identifying and regulating HAPs. Title III of the CAAA directed EPA to promulgate national emissions standards for HAPs (NESHAP). The NESHAP may differ for major sources of HAPs than for area sources. Major sources are defined as stationary sources with potential to emit more than 10 tons per year (tpy) of any HAP or more than 25 tpy of any combination of HAPs; all other sources are considered area sources. The emissions standards were to be promulgated in two phases. In the first phase (1992–2000), EPA developed technology-based emission standards designed to produce the maximum emission reduction achievable. These standards are generally referred to as requiring MACT. For area sources, the standards may be different, based on generally available control technology. In the second phase (2001–2008), EPA is required to promulgate health risk–based emissions standards where deemed necessary to address risks remaining after implementation of the technology-based NESHAP standards.

The CAAA also required EPA to promulgate vehicle or fuel standards containing reasonable requirements that control toxic emissions of benzene and formaldehyde at a minimum. Performance criteria were established to limit mobile-source emissions of toxics, including benzene, formaldehyde, and 1,3-butadiene. In addition, Section 219 required the use of reformulated gasoline in selected areas with the most severe ozone nonattainment conditions to further reduce mobile-source emissions.

State and Local Programs for Toxic Air Contaminants

TACs in California are primarily regulated through the Tanner Air Toxics Act [Assembly Bill (AB) 1807] and the Air Toxics Hot Spots Information and Assessment Act of 1987 (AB 2588). AB 1807 sets forth a formal procedure for ARB to designate substances as TACs. Research, public participation, and scientific peer review must be completed before ARB can designate a substance as a TAC. To date, ARB has identified more than 21 TACs, and has adopted EPA's list of HAPs as TACs. Most recently, diesel PM was added to the ARB list of TACs.

Once a TAC is identified, ARB then adopts an Airborne Toxics Control Measure (ACTM) for sources that emit that particular TAC. If there is a safe threshold for a substance at which there is no toxic effect, the control measure must reduce exposure below that threshold. If there is no safe threshold, the measure must incorporate BACT to minimize emissions.

AB 2588 requires existing facilities emitting toxic substances above a specified level to:

- prepare a toxic emission inventory,
- prepare a risk assessment if emissions are significant,
- notify the public of significant risk levels, and
- prepare and implement risk reduction measures.

At the local level, air-pollution-control or management districts may adopt and enforce ARB control measures. Under BAAQMD Rule 2-5 ("New Source Review for TACs"), all sources that possess the potential to emit TACs are required to obtain permits from the district. Permits may be granted to these operations if they are constructed and operated in accordance with applicable regulations, including new-source-review standards and air-toxics control measures. BAAQMD limits emissions and public exposure to TACs through a number of programs. BAAQMD prioritizes TAC-emitting stationary sources based on the quantity and toxicity of the TAC emissions and the proximity of the facilities to sensitive receptors.

4.3.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

For the purpose of this analysis, the following thresholds of significance, as identified by the State CEQA Guidelines (Appendix G) and BAAQMD have been used to determine whether implementation of the proposed project would result in a significant air quality impact.

As stated in Appendix G, the significance of criteria established by the applicable air quality management or air pollution control district may be relied upon to make significance determinations. Thus, as recommended by BAAQMD (BAAQMD 1999), implementation of the proposed project would result in significant air quality impacts if:

- Feasible BAAQMD-recommended control measures for construction-generated emissions are not implemented;

- Long-term regional (i.e., operational) criteria air pollutant or precursor emissions exceed the BAAQMD-recommended threshold of 80 pounds per day (lb/day) or 15 tons per year (tpy) of ROG, NO_x, or $PM_{10;}$

- Local mobile-source emissions exceed or substantially contribute to CO concentrations that violate the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm;

- Exposure of sensitive receptors to TAC emissions exceeds the probability of 10 in one million for the Maximally Exposed Individual (MEI) of contracting cancer and/or ground-level concentrations of non-carcinogenic TACs exceed Hazard Index of 1.0 for the MEI; or

- Exposure of the public to objectionable odors frequently occurs.

MODELING METHODOLOGY

The URBEMIS2002 model (Version 8.7.0) was used to estimate the increase in air emissions associated with changes in vehicle trips associated with the project. The results for the proposed project are summarized in Table 4-3. The detailed URBEMIS2002 modeling results are included in Appendix B.

Table 4-3
Increase in Air Emissions Associated with Project-Related Vehicle Trips

Land Use	ROG		NO_x		PM_{10}	
	(lb/day)	(tpy)	(lb/day)	(tpy)	(lb/day)	(tpy)
Single Family Housing	13.28	2.27	19.11	2.70	12.01	2.19
Senior Housing	10.07	1.84	14.50	2.05	9.11	1.66
City Park	0.01	0	0.02	0	0.01	0
Total	**23.36**	**4.11**	**33.63**	**4.75**	**21.13**	**3.85**
BAAQMD Significance Threshold	80	15	80	15	80	15
Exceed Threshold	No	No	No	No	No	No

Source: EDAW 2006

CO concentrations were estimated for three nearby intersections with the highest level of congestion as measured by level of service (LOS). LOS was estimated as part of the traffic analysis conducted for this project (refer to Section 4.10 of this Draft EIR). The three intersections included in the CO analysis were:

- San Tomas Expressway/Pruneridge Avenue,
- San Tomas Expressway/Stevens Creek Boulevard, and
- Monroe Boulevard/Stevens Creek Boulevard.

For each of these intersections, three alternatives were analyzed:

- Existing Conditions,
- Future without the Project, and
- Future with the Project.

CO concentrations were estimated using the CALINE4 model developed by the California Department of Transportation (Caltrans). The vehicle emission rates used in the CALINE4 model were developed using the California ARB's EMFAC2002 model. CO concentrations were estimated at 3 and 7 meters from the intersection in accordance with the transportation project-level carbon monoxide protocol (Garza et al, 1997). The detailed CO modeling data are included in Appendix B. The results of the CO modeling for the proposed project are shown in Table 4-4.

Table 4-4
Carbon Monoxide Modeling Results Under Project Conditions

	Existing		Future No Project		Future with Project	
Receptor	1-hour	8-hour	1-hour	8-hour	1-hour	8-hour
1. Pruneridge Avenue/San Tomas Expressway	11.4	6.9	12.2	7.3	12.2	7.3
2. Stevens Creek/San Tomas Expressway	13.9	7.3	14.7	7.6	14.7	7.7
3. Stevens Creek/Monroe Street	12.4	6.9	13.4	7.3	13.5	7.4
California Standards	20	9.0	20	9.0	20	9.0

Notes: EMFAC2002 used to generate vehicle emission rates. CALINE4 modeling used to estimate ambient concentrations. 1-hour background concentration of 6.0 ppm and 8-hour concentration of 3.7 ppm based on data from the measuring/monitoring station in accordance with the CO protocol. A persistence factor of 0.7 was used to convert 1-hour to 8-hour concentrations.

Source: EDAW 2004

A Phase II – Site Characterization Report was prepared for the project site (Environ 2002). The purpose of the site characterization report was to determine whether current or past chemical use at the project site resulted in soil concentrations that might pose a threat to public health. The report found that elevated concentrations of certain chemicals used at the site could pose a potentially significant health risk. Consequently, the report recommended that contaminated soils above cleanup goals be remediated to appropriate levels for proposed uses (i.e., unrestricted residential use). Therefore, the state proposes to remove and remediate onsite soils in accordance with the requirements of the Removal Action Workplan (RAW) approved by the Department of Toxic Substances Control (DTSC) (see Section 4.6 for a description of the RAW). These remediation activities are an element of the project and would be implemented before construction activities begin at the site. Development of the project would not proceed unless onsite soils are remediated.

IMPACT ANALYSIS

Impact 4.3-1

Construction and Remediation-Related Air Emissions. *Although implementation of the project would generate PM_{10} emissions during construction and remediation activities, the developers would implement all feasible BAAQMD PM_{10} control measures to control construction-related dust emissions at the site, and as part of the RAW for proposed remediation activities would implement dust control measures consistent with DTSC Standards to control dust and prevent the airborne exposure of soil contaminants to nearby residents. Therefore, this would be a less-than-significant impact.*

Construction

Construction-related emissions are generally short-term in duration, but have the potential to cause adverse air quality impacts. PM_{10} is the pollutant of greatest concern with respect to construction activities. While construction equipment and hauling of trucks emit CO and ozone precursors, these emissions are included in the emissions inventory that is the basis for regional air quality plans, and are not expected to impede attainment of ozone or maintenance of CO standards in the Bay Area. PM_{10} emissions can result from a variety of construction activities, including excavation, grading, demolition, site preparation, hauling of soil offsite, vehicle travel on paved and unpaved surfaces, and vehicle and equipment exhaust.

The BAAQMD emphasizes implementation of effective and comprehensive control measures rather than requiring a detailed quantification of construction emissions. The BAAQMD requires that all feasible control measures, which are dependent on the size of the construction area and the nature of the construction operations involved, shall be incorporated into the project design and implemented during all construction activities (BAAQMD 1999). Implementation of BAAQMD control measures reduce fugitive dust emissions by approximately 50–75%. The project applicants have agreed to implement all feasible BAAQMD-recommended control measures for construction-generated PM_{10} emissions. Therefore, short-term construction-generated PM_{10} emissions would be less than significant.

Remediation

As a result of pesticide use related to past agricultural practices on the site some soils have concentrations of arsenic and dieldrin above EPA preliminary remediation goals. To develop the site, the Department of General Services (DGS) would be required to remediate onsite soils to bring them to levels suitable for proposed uses (i.e., unrestricted residential use), before construction of any proposed buildings. Pursuant to DGS' Voluntary Cleanup Agreement (VCA) with the DTSC, DGS has prepared a RAW that identifies necessary remediation activities. Elements of the RAW include excavation and removal of onsite contaminated soils and importation of clean fill material. During these activities, disturbance of onsite soils could result in dust generation and release contaminants to the atmosphere and imported fill could contain contaminants (i.e., naturally occurring asbestos). The approved RAW would include dust control measures in compliance with BAAQMD requirements, including but not limited to: wet suppression, air monitoring and collection of meteorological data, and installation of a

wind fence (50% porosity) to reduce wind speed and minimize offsite travel of dust particles. Implementation of these dust control measures would reduce the potential for nearby residents to be exposed to contaminants present in onsite soils through the air pathway to less-than-significant levels. Further, the RAW would include measures (i.e., soil testing) to prevent the importation of fill material that contains contaminants. Therefore, this would be a less-than-significant impact.

Impact 4.3-2

Exposure to Objectionable Odors. *Odors from construction activities would be intermittent and temporary in nature, and would dissipate rapidly from the source with increases in distance. In addition, no existing odor sources are located in the vicinity of the proposed project site and the project would not include the long-term operation of any new sources. Thus, the proposed project would not result in the frequent exposure of the public to objectionable odors. As a result, this impact would be considered less than significant.*

The occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. While offensive odors rarely cause any physical harm, they can be unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies.

Offensive odors can often be unpleasant, although they rarely cause long-term physical harm. The nearest sensitive land uses include residential development that immediately border the north, west, and southern site boundaries.

The construction of the proposed project would result in odors from the diesel exhaust of on-site construction equipment and asphalt paving emissions. The diesel exhaust and paving emissions would be intermittent and temporary in nature, and dissipate rapidly from the source with increases in distance. In addition, no existing odor sources are located in the vicinity of the proposed project site and the project would not include the long-term operation of any new sources. Thus, the operation of the proposed project would not result in the frequent exposure of the public to objectionable odors. As a result, this impact is considered less than significant.

Impact 4.3-3

Long-term Operational Criteria Air Pollutant Emissions. *Long-term operation of the project would not result in regional or local criteria air pollutant emissions that exceed the BAAQMD-recommended significance thresholds for ROG, NO_x, PM_{10}, or CO. Therefore, this impact would be less than significant.*

Long-term operation of project would result in criteria air pollutant emissions primarily from mobile (i.e., vehicle) sources. According to the transportation impact analysis, project implementation would generate a total of approximately 2,159 average daily vehicle trips (ADT) (Fehr & Peers 2005). In accordance with BAAQMD-recommended guidance, regional mobile-source emissions of ROG, NO_X, and PM_{10} associated with the operation of the project were estimated using URBEMIS 2002 Version 8.7.0 computer program, as discussed above, based on proposed land use types and number of units, project trip generation estimates from

the transportation analysis, and default model settings. As shown in Table 4-3, long-term regional operational emissions would not exceed the BAAQMD-recommend significance thresholds for ROG, NO_x, or PM_{10}. In addition, as shown in Table 4-4, long-term local operational emissions would not exceed or substantially contribute to CO concentrations that violate the 1-hour ambient air quality standard of 20 ppm or the 8-hour standard of 9 ppm. Furthermore, the project would not result in any major area or stationary-source emissions. As a result, this impact would be less than significant.

Impact 4.3-4

Exposure of Sensitive Receptors to Toxic Air Contaminants. Because neither the short-term remediation or construction nor the long-term operation of the project would be anticipated to result in the exposure of sensitive receptors to substantial TAC concentrations, this impact would be considered *less than significant.*

Short-term Remediation and Construction

Remediation and construction of project would result in short-term diesel exhaust emissions from on-site heavy duty equipment. Particulate exhaust emissions from diesel-fueled engines (diesel PM) were identified as a TAC by the ARB in 1998. Construction of the project would result in the generation of diesel PM emissions from the use of off-road diesel equipment required for site grading and excavation, paving, and other construction activities. The dose to which the receptors are exposed (a function of concentration and duration of exposure) is the primary factor used to determine health risk (i.e., potential exposure to TAC emission levels that exceed applicable standards). According to the Office of Environmental Health Hazard Assessment (OEHHA), health risk assessments, which determine the exposure of sensitive receptors to TAC emissions, should be based on a 70-year exposure period; however, such assessments should be limited to the period/duration of activities associated with the project (Salinas, pers. comm., 2004). Thus, because the use of mobilized equipment would be temporary in combination with the dispersive properties of diesel PM (Zhu and Hinds 2002) and that project construction activities would not be atypical in comparison to similar development-type projects (i.e., no excessive material transport or associated truck travel), short-term construction activities would not result expose sensitive receptors to substantial TAC concentrations.

Long-term Operation

Long-term operation of the proposed project would not include any major stationary sources of TACs. However, implementation of the project would include proposed residences. Because of the sensitivity of such uses, especially the senior housing, assessment of compatibility of surrounding land uses with respect to sources of TAC emissions is discussed below.

ARB recently published the *Air Quality and Land Use Handbook: A Community Health Perspective* (California Air Resources Board 2005b), which provides new guidance concerning land use compatibility with sources of TAC emissions. The handbook offers recommendations for the siting of sensitive receptors near uses associated with TACs such as freeways and high-traffic

roads, commercial distribution centers, rail yards, ports, refineries, dry cleaners, gasoline stations, and industrial facilities. The handbook is advisory and not regulatory, but it offers the recommendations identified below that may be pertinent to the project.

- Avoid siting new sensitive land uses within 500 feet of a freeway, urban roads carrying 100,000 vehicles per day, or rural roads carrying 50,000 vehicles per day.
- Avoid siting new sensitive land uses within 300 feet of a large gasoline station (defined as a facility with a throughput of 3.6 million gallons per year or greater). A 50-foot separation is recommended for typical gasoline-dispensing facilities.
- Avoid siting new sensitive land uses within 300 feet of any dry-cleaning operation using perchloroethylene. For operations with two or more machines, provide 500 feet. For operations with three or more machines, consult the local air district. Do not site new sensitive land uses in the same building with dry-cleaning operations that use perchloroethylene

The siting of proposed receptors within the project would be consistent with all of the recommendations listed above, and thus would not expose sensitive receptors to substantial toxic air contaminant concentrations. As a result, this impact would be less than significant.

4.3.3 MITIGATION MEASURES

No mitigation measures would be required for the following less-than-significant impacts.

4.3-1: Short-term Construction-Generated Criteria Air Pollutant Emissions.

4.3-2: Exposure to Objectionable Odors.

4.3-3: Long-term Operational Criteria Air Pollutant Emissions.

4.3-4: Exposure of Sensitive Receptors to Toxic Air Contaminants.

4.3.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's air quality impacts (Impacts 4.3-1 through 4.3-4) would be less than significant. No mitigation is required.

4.4 NOISE

The purpose of this analysis is to determine potential noise impacts associated with construction and implementation of the proposed project and cleanup and removal of contaminated soils. The project site is not located in an airport land use plan or within 2 miles of a public or private air strip. Therefore, this issue is not addressed further in this Draft EIR.

4.4.1 ENVIRONMENTAL SETTING

Noise is typically defined as unwanted sound. The human response to noise is subjective and varies considerably from individual to individual. Noise in the community has often been cited as a health problem, not in terms of actual physiological damage, such as hearing impairment, but in terms of inhibiting general well-being and contributing undue stress and annoyance. The health effects of noise in the community arise from interference with human activities, including sleep, speech, recreation, and tasks demanding concentration or coordination. Hearing loss can occur at the highest noise intensity levels. When community noise interferes with human activities or contributes to stress, public annoyance with the noise source increases. The acceptability of noise and the threat to public well-being are the basis for land use planning policies preventing exposure to excessive community noise levels.

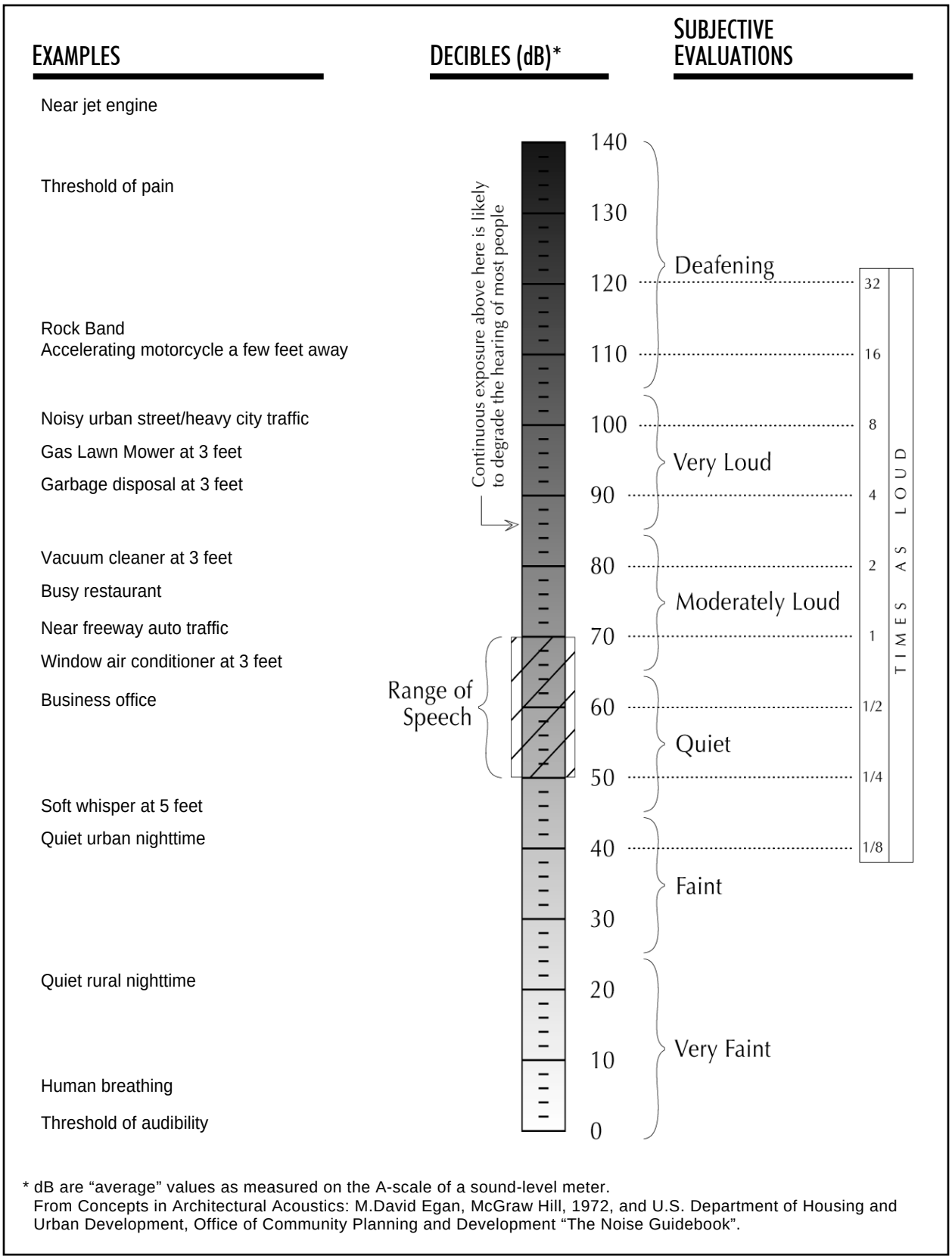
COMMON NOISE DESCRIPTORS

Community noise levels are measured in terms of the "A-weighted decibel," abbreviated dBA. A-weighting is a frequency correction that correlates overall sound pressure levels with the frequency response of the human ear. Typical noise levels generated by various activities are provided in Exhibit 4-1. Appendix C provides a summary of acoustical terminology.

The perceived loudness of sound is dependent on many factors, including sound pressure level and frequency of occurrence. For this reason, various noise descriptors have been developed to aid in the analysis, description, and understanding of noise and its effects. Noise descriptors typically used for the analysis of noise are described below.

The instantaneous noise levels during a specific period of time in dBA are converted to relative energy values. From the sum of the relative energy values, an average or equivalent energy value is calculated, which is then converted back to dBA. The result is presented in equivalent sound levels (L_{eq}).

Based on numerous studies conducted over the years, the maximum continuous sound level that will allow relaxed conversations with 100% intelligibility in the interior of a structure (at distances of approximately 3.5 feet) is generally recognized as being 45 dBA L_{eq}. A 95% intelligibility, which is generally considered to be "satisfactory conversation," can be obtained with a steady sound level of up to 64 dBA L_{eq}. Speech intelligibility is nearly zero at levels exceeding 80 dBA L_{eq}.



* dB are "average" values as measured on the A-scale of a sound-level meter.
From Concepts in Architectural Acoustics: M.David Egan, McGraw Hill, 1972, and U.S. Department of Housing and Urban Development, Office of Community Planning and Development "The Noise Guidebook".

Source: EDAW 2004

Typical Noise Levels

EXHIBIT 4-1

Cumulative noise descriptors have been developed in an attempt to account for the loudness, duration, and frequency of noise events in terms of community exposure. The Day Night Average Level (L_{dn}) and the Community Noise Equivalent Level (CNEL) represent time-weighted average of all measured noise levels obtained over a 24-hour period of time. Time-weighted refers to the fact that noise occurring during certain sensitive time periods is weighted (in calculations) more heavily. Both the L_{dn} and CNEL scales include a 10 dBA "penalty," or weighting, added for nighttime noise (10 p.m. to 7 a.m.) to account for the greater sensitivity to noise during this period. CNEL is similar to L_{dn}, but adds an additional 5 dBA penalty to evening noise (7 p.m. to 10 p.m.).

EXISTING NOISE ENVIRONMENT

Noise levels at the project site vary in relation to distance from nearby noise sources. Ambient noise levels in the eastern portion of the project site are dominated by traffic noise from North Winchester Boulevard and nearby commercial land uses. Ambient noise environment in the western portion of the project site are dominated by distant traffic noise from Stevens Creek Boulevard, adjacent residential uses, and an occasional aircraft over flight. No other transportation noise sources were identified in the immediate project area. Operations at nearby commercial land uses do not substantially influence the ambient noise environment at the site as commercial-related noise is masked by traffic noise from North Winchester Boulevard.

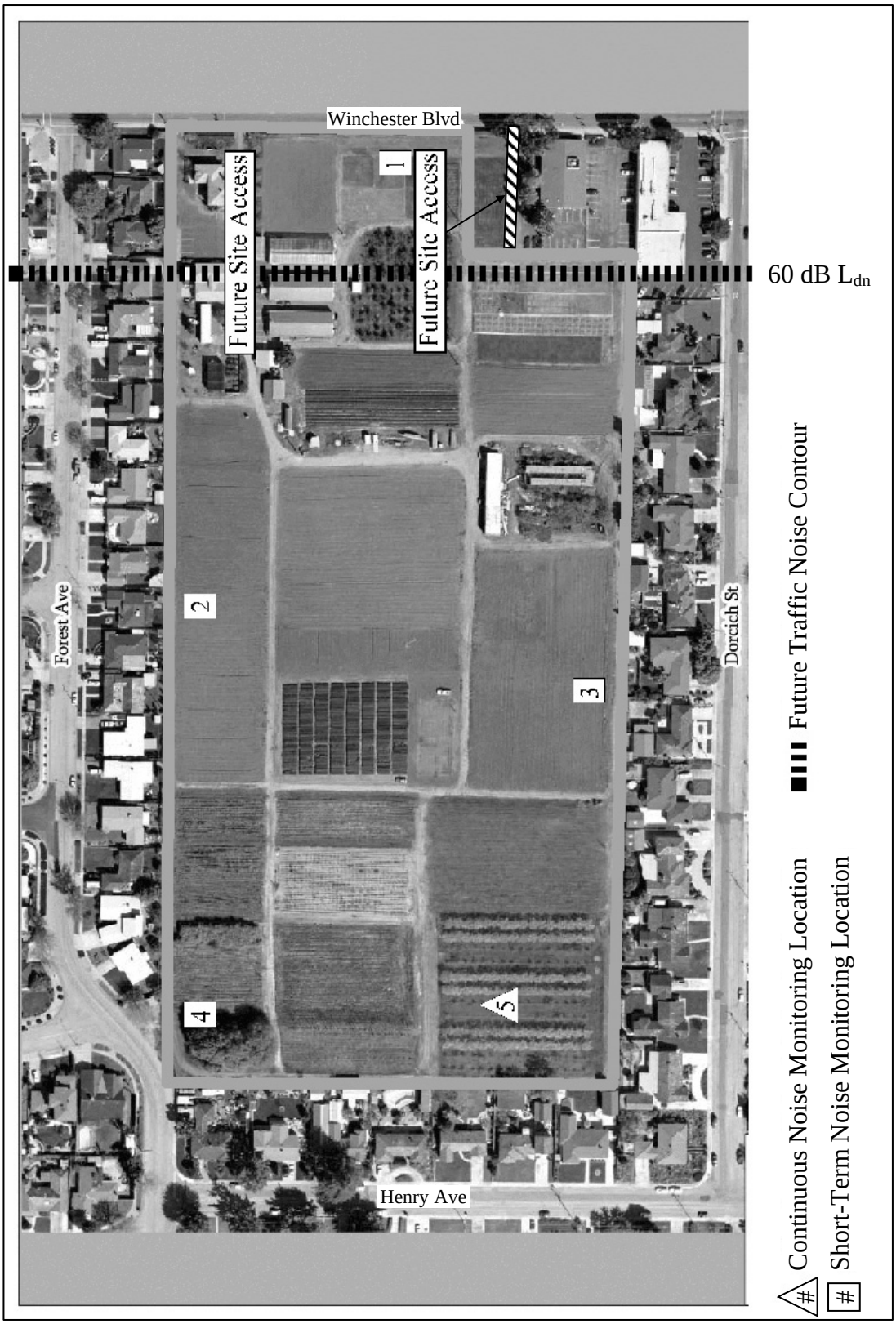
General Ambient Noise Levels

Short-term ambient noise measurements were conducted at four locations on the site on June 12, 2003. Average daytime noise levels on the project site were approximately 59 dB L_{eq} near North Winchester Boulevard and 47–53 dB L_{eq} in western portion of the project site. Table 4-5 shows the results of the short-term noise level measurements taken at the project site. Noise measurement locations are shown in Exhibit 4-2.

Table 4-5
Ambient Noise Level Measurement Results

Site	Location	Time	L_{eq}, dB	L_{dn}, dB	L_{max}, dB
1	East Side of Site	10:39 a.m.	59	NA	71
2	North Side of Site	11:05 a.m.	47	NA	59
3	South Side of Site	11:59 a.m.	49	NA	65
4	Northwest Area of Site	11:50 a.m.	53	NA	67
5	Southwest Area of Site	Continuous*	NA	50-52	71

* The complete results of the continuous noise measurements are provided in Appendix C



Source: Bollard & Brennan 2003; EDAW 2004

Noise Measurement and Suggested Noise Barriers

EXHIBIT 4-2

Existing Traffic Noise Levels

Existing traffic noise levels were calculated for roadway segments in the project area using the Federal Highway Administration Highway Traffic Noise Prediction Model (FHWA RD 77 108) and entering the average daily traffic volumes, PM peak-hour intersection turning movements, and vehicle distribution patterns obtained from transportation analysis in Section 4.7 of this Draft EIR. Table 4-6 shows the simulated existing traffic noise levels (in L_{dn}) at a standard distance of 50 feet from the centerlines of the existing project-area roadways, as well as distances to existing traffic noise contours.

Table 4-6
Existing Traffic Data, Noise Levels, and Distances to Contours

Roadway	Segment	Distance to Contours (feet)				
		Existing ADT	L_{dn} @ 50 Feet	60 dB L_{dn}	65 dB L_{dn}	70 dB L_{dn}
North Winchester Boulevard	North of W. Hedding Street	10,680	65.62	156.4	74.3	-
	West Hedding Street to Forest Avenue	14,670	67.0	192.8	90.9	-
	Forest Avenue to Dorcich Street	19,500	68.23	232.7	9.2	53.1
	Dorcich Street to Stevens Creek Boulevard	19,190	67.89	220.9	103.8	-
	South of Stevens Creek Boulevard	25,750	69.17	268.4	125.6	60.5
Pruneridge Avenue	West of North Winchester Boulevard	12,640	66.35	174.7	82.7	-
West Hedding Street	East of North Winchester Boulevard	9,610	66.24	145.1	67.6	-
Forest Avenue	West of North Winchester Boulevard	865	55.78	-	-	-
	East of North Winchester Boulevard	9,210	66.05	141	65.7	-
Dorcich Street	West of North Winchester Boulevard	1,570	58.87	-	-	-
Stevens Creek Boulevard	West of North Winchester Boulevard	28,310	69.85	298	139.2	66.6
	East of North Winchester Boulevard	32,690	70.48	327.9	153.0	72.8

Note: A complete listing of FHWA inputs is provided in Appendix C.

Source: Modeled by EDAW in 2003

REGULATORY BACKGROUND

Various governmental agencies and committees have established noise regulations, standards, and guidelines to protect citizens from potential hearing damage and various other adverse physiological and social effects associated with noise. The state and local regulations, standards, and guidelines considered most applicable to the proposed project are discussed below.

State of California Building Code

California Code of Regulations, Title 24, contains standards for allowable interior noise levels associated with exterior noise sources (California Building Code 1998). The standards apply to new hotels, motels, dormitories, apartment houses, and dwellings other than detached single-family residences.

In accordance with Title 24 requirements, residential structures proposed for construction in areas that exceed an annual average noise level of 60 dBA L_{dn}/CNEL shall be required to complete an acoustical analysis showing that the proposed design will achieve the prescribed allowable interior noise level of 45 dBA L_{dn}/CNEL.

City of Santa Clara General Plan

The Noise Element of the City of Santa Clara General Plan establishes exterior noise level standards in terms of L_{dn} noise levels for noise-sensitive land uses in the City. The specific noise standards applicable to the proposed project are shown in Table 4-7.

Table 4-7
City of Santa Clara General Plan Noise Standards

Land Use	Noise Level Criteria, dB L_{dn}		
	Satisfactory	Cautionary	Critical
Residential Exterior	45-55	55-65	65-80
Parks	45-65	65-80	N/A
Residential Interior	45	N/A	N/A
Source: City of Santa Clara General Plan 1992			

City of San Jose General Plan

The Noise Element of the City of San Jose General Plan establishes acceptable interior and exterior noise level criteria for residential uses affected by both transportation and non-transportation noise sources. For residential uses affected by non-transportation noise sources, such as park uses, the General Plan establishes an exterior noise level standard of 55 dB DNL. The DNL noise level standard is equivalent to the L_{dn} noise level standard. For residential uses affected by transportation noise sources, such as roadway noise, the San Jose General Plan establishes an "acceptable" exterior noise level standard for residential uses of 55-60 dB DNL (L_{dn}), which is applied in the outdoor activity areas. The maximum allowable interior noise level in the City of San Jose is 45 dB DNL for new residential projects (City of San Jose 2003).

4.4.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

Generally, a project may have a significant effect on the environment if it would substantially increase the ambient noise levels for adjoining areas or expose people to severe noise levels. In practice, more specific professional standards have been developed. The Federal Interagency Committee on Noise (FICON) has published recommendations to provide guidance in the assessment of changes in ambient noise levels resulting from aircraft operations. The recommendations are based on studies that relate aircraft noise levels to the percentage of persons highly annoyed by the noise. Although the FICON recommendations were specifically developed to assess aircraft noise impacts, in practice they have been applied to all sources of noise. The significance recommendations are presented in Table 4-8.

According to Table 4-8, an increase in the traffic noise level of 1.5 dB or more would be significant where the ambient noise levels exceed 65 dB L_{dn}. The rational for the criteria is that, as ambient noise levels increase, a smaller increase in noise resulting from a project is sufficient to cause significant annoyance.

Table 4-8
Significance of Changes in Cumulative Noise Exposure

Ambient Noise Level Without Project, L_{dn}	Increase Required for Significant Impact
<60 dB	+5.0 dB or more
60-65 dB	+3.0 dB or more
>65 dB	+1.5 dB or more
Source: FICON	

The proposed project would have a significant noise impact if it would:

- expose persons to or generate noise levels in excess of standards established in the City of Santa Clara and City of San Jose General Plan and noise ordinances; specifically, exterior noise levels in excess of 55 dB L_{dn};
- result in a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project, as defined in Table 4-12;
- result in a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project, defined as 3 dB; or
- expose persons to or result in generation of excessive groundborne noise.

IMPACT ANALYSIS

Impact 4.4-1

Increased Operational Traffic Noise Levels. *The project would not result in a substantial increase in trip generation compared to existing conditions. Traffic noise levels would increase by less than 0.1 "A-weighted decibel," abbreviated dBA. This would not represent a substantial change in the ambient noise environment (i.e., less than 3 dBA). Therefore, this would be a less-than-significant impact.*

As discussed in Section 4.10, Transportation, the proposed project would not substantially increase trip generation compared to existing conditions. Modeling results for predicted traffic noise levels associated with the project (presented in Table 4-9) indicate that the project would result in a less than ~0.30 dBA increase in roadway traffic noise levels. This change would not represent a substantial change in the ambient noise environment (i.e., less than 3 dBA) and would not noticeably change traffic noise levels from existing conditions. Therefore, this would be a less-than-significant impact. Please refer to Impact 4.4-3 for a discussion of noise impacts to future residents of the site.

Table 4-9
FHWA Traffic Noise Prediction Model Results

Roadway	Segment	Predicted L_{dn}, 50 Feet from Roadway Centerline						
		Existing No Project	Existing + Project	Change	Background No Project	Background + Project	Change	Background +Project Future 60 dB L_{dn} Contour
N.Winchester Boulevard	N. of W. Hedding Street	65.62	65.72	0.1	66.85	66.92	0.07	190.4
	W. Hedding Street to Forest Avenue	67	67.17	0.17	67.62	67.77	0.15	216.9
	Forest Avenue to Dorcich Street	68.23	68.44	0.21	68.99	69.16	0.17	268.1
	Dorcich Street to Stevens Creek Boulevard	67.89	68.09	0.2	69.66	69.79	0.13	294.9
	S. of Stevens Creek Boulevard	69.17	69.23	0.06	70.54	70.57	0.03	332.7
Prunridge Avenue	W. of N. Winchester Boulevard	66.35	66.42	0.07	67.47	67.51	0.04	208.4
W. Hedding Street	E. of N. Winchester Boulevard	66.24	66.29	0.05	67.13	67.17	0.04	167.4
Forest Avenue	W. of N. Winchester Boulevard	55.78	55.90	0.12	55.78	55.90	0.12	-
	E. of N. Winchester Boulevard	66.05	66.13	0.08	66.38	66.45	0.07	149.9

Table 4-9
FHWA Traffic Noise Prediction Model Results

Roadway	Segment	Predicted L_{dn}, 50 Feet from Roadway Centerline						
		Existing No Project	Existing + Project	Change	Background No Project	Background + Project	Change	Background + Project Future 60 dB L_{dn} Contour
Dorcich Street	W. of N. Winchester Boulevard	58.37	58.48	0.11	59.91	59.99	0.08	55.9
Stevens Creek Boulevard	W. of N. Winchester Boulevard	69.85	69.87	0.02	70.03	70.05	0.02	306.9
	E. of N. Winchester Boulevard	70.48	70.53	0.05	70.76	70.81	0.05	344.9

Note: A complete listing of FHWA inputs is provided in Appendix C.

Source: Modeled by EDAW in 2003

Impact 4.4-2

Stationary Source Noise Impacts. *Noise levels associated with proposed residential and park land uses would not exceed the City of San Jose and City of Santa Clara exterior noise threshold of 55 dBA. Proposed land uses are not anticipated to generate substantial stationary noise and would not expose adjacent residences to new onsite sources of noise associated with development of the project. Therefore, this would be a less-than-significant impact.*

Construction of the proposed housing units would not result in the construction or operation of any major onsite sources of noise and would not result in excessive groundborne vibration or groundborne noise levels. Noise associated with residential development typically includes intermittent and short-term noise associated with amplified music, adult and children voices, and lawn maintenance equipment. Noise from these stationary and area noise sources are expected to result in an increase in ambient noise levels but are not expected to exceed the exterior noise threshold of 55 dBA at adjacent residential dwellings

The project would include a one-acre park in the northwest portion of the site and landscaped/garden areas near the senior housing facilities. Noise levels for proposed park uses were estimated by measuring continuous four-day noise levels at a similar park facility. The results of the noise monitoring indicated that park uses generated noise levels that ranged from 50 to 52 dBA L_{dn}, which is below the City's satisfactory noise standard of 55 dBA L_{dn}. Therefore, proposed park uses are not anticipated to generate substantial stationary noise and would not expose adjacent residences to new onsite sources of noise associated with development of the project. Because noise levels associated with proposed residential and park land uses would not exceed existing City noise standards, this would be a less-than-significant impact.

Impact 4.4-3

Exterior Noise Level Impacts. Exterior noise levels in open courtyard areas of the senior housing site (i.e., open space and garden areas) currently exceed and would continue to exceed the state and city's exterior noise standard of 55 dB Day Night Average Level L_{dn}). This would be a significant impact.

Exterior noise levels at residential units closest to Winchester Boulevard are expected to reach up to 67 dB L_{dn} with implementation of the project. These noise levels would exceed the City of Santa Clara satisfactory noise standard of 55 dB L_{dn}. No public use areas (i.e., open space areas and gardens) would be located on the east side of the senior housing facility adjacent to Winchester Boulevard. The proposed senior housing public use areas would be located in the center of the senior housing site surrounded residential buildings on the east and south sides. It is anticipated that the proposed 2- to 4-story buildings would attenuate exterior noise levels in these public use areas to some degree. However, it is not certain whether these exterior noise levels would fall below the state and city's exterior noise standard of 55 dB L_{dn}. Therefore, this would be a potentially significant impact.

Impact 4.4-4

Interior Noise Level Impacts. *Interior noise levels in proposed onsite residences would be approximately 42 dBA with incorporation of standard design measures (i.e., central heating and air), which is below state and city interior noise standards. Therefore, this would be a less-than-significant impact.*

Although exterior noise levels would be approximately 67 dB L_{dn} near Winchester Boulevard, typical building facades and design elements that are part of the project (i.e., HVAC systems, dual-pane windows) would reduce interior noise levels by approximately 25 dB L_{dn}. Specific information on the siting and design of onsite residences is not available at this time. However, proposed residences would be constructed with windows that could open and close and central heating and air conditioning systems. Implementation of these design elements would reduce interior noise levels by approximately 25 dB L_{dn}. Predicted interior noise levels, with implementation of the standard design measures, would be approximately 42 dB L_{dn}, which is below state and city interior noise standards. This would be a less-than-significant impact.

Impact 4.4-5

Demolition and Construction Noise. *Construction-related noise levels could reach 88 dBA at adjacent residences. Although construction-related noise impacts would be short-term, temporary, and would cease after the project is complete, these noise levels could exceed the City of Santa Clara's maximum allowable noise standard of 75 dBA. This would be a potentially significant impact.*

Construction noise would be temporary and would include noise from activities such as soil excavation, site preparation, truck hauling of material, and construction of buildings. Construction noise typically occurs intermittently and varies depending on the nature or phase of construction and the activities being performed. Noise generated during construction and demolition activities would be primarily associated with the use of mobile equipment including graders, dozers, and excavators. No groundborne noise generating equipment (e.g., pile drivers) would be used at the site. Because power is already supplied to the project site, use of portable power generators would not be anticipated. Construction of the proposed project would occur in phases over a 24- to 36-month construction period.

Because of the noise-generation potential of construction projects, such activities during the more noise-sensitive evening and nighttime hours are of increased concern. Exterior ambient noise levels typically decrease during the late evening and nighttime hours because of decreased community activities (e.g., industrial activities, vehicle traffic). Construction performed during these more noise-sensitive periods of the day can result in annoyance and potential sleep disruption to occupants of nearby residential dwellings. Project facilities would be constructed during daytime hours of operation (i.e., 7 a.m. to 7 p.m. weekdays and Saturdays 9 a.m. to 6 p.m.).

The U.S. EPA has found that average noise levels associated with construction activities typically range from 76 dBA to 84 dBA L_{eq}, with intermittent individual equipment noise levels ranging from 75 dBA to more than 88 dBA for brief periods of time (U.S. EPA 1971). Table 4-14 lists typical uncontrolled noise levels generated by individual construction equipment at a distance of 50 feet. These equipment noise levels were obtained from the U.S. EPA and are currently the most thorough and comprehensive data listing available. However, it should be noted that these equipment noise levels are more than 30 years old. Newer models are typically designed and built with the incorporation of noise control features (e.g., mufflers, engine shrouds, insulation) and, as a result, are anticipated to generate noise levels that are substantially less than those presented in Table 4-10. Consequently, it is reasonable to assume that the equipment noise levels presented in Table 4-10 would represent the high end of construction-generated noise levels.

Noise from localized point sources (such as construction sites) typically decreases by about 6 dBA with each doubling of distance from source to receptor. Given this noise attenuation rate, and assuming a maximum noise level of 88 dBA at the project site boundary, maximum short-term noise levels at the adjacent noise-sensitive land uses, would be approximately 88 dBA. Although construction activities would be short-term, temporary, and would cease after the project is complete, these noise levels would exceed the City's maximum allowable noise standard of 75 dBA. As a result, noise-generating construction activities would have a potentially significant short-term noise impact.

Table 4-10
Construction Equipment Noise

Type of Equipment	Maximum Level, dB at 50 feet
Bulldozers	87
Heavy Trucks	88
Backhoe	85
Pneumatic Tools	85

Source: Environmental Noise Pollution, Patrick R. Cunniff 1977

4.4.3 MITIGATION MEASURES

No mitigation is required for the following less-than-significant noise impacts.

4.4-1: Increased Traffic Noise Levels.

4.4-2: Stationary Source Noise Impacts.

4.4-4: Interior Noise Level Impacts.

Mitigation is recommended for the following potentially significant impact.

4.4-3: Exterior Noise Level Impacts. To minimize noise impacts in open courtyard areas of the senior housing site, the developers shall direct the preparation of acoustical mitigation by a qualified acoustical engineer with expertise in mitigating traffic noise impacts to noise-sensitive land uses. If deemed necessary, mitigation measures to reduce noise levels at affected land uses shall be included at the site and/or in building design and implemented as prescribed. Such measures may include the location of buildings to block roadway noise, siting of open space areas outside areas with exterior noise levels that are greater than 55 dB L_{dn}, or installation of facilities (i.e., wall or berm) that would attenuate traffic noise levels. Implementation of recommended design measures would occur on the project site and would not cause substantial changes in project grading, construction, or design plans. As such, impacts of such improvements are similar to impact of the proposed project, which is evaluated in detail throughout this EIR. The project developers shall ensure that exterior noise levels in public use areas do not exceed 55 dBA.

4.4-5: Demolition and Construction Noise. To minimize noise impacts to nearby sensitive receptors, the developers shall:

- close all equipment engine doors on motorized equipment during operation,
- not leave motorized construction equipment idling when not in use, and
- restrict hours of construction as regulated by City of Santa Clara Ordinance (7 a.m. to 6 p.m., Monday though Friday; 9 a.m. though 6 p.m. on Saturdays; no construction on holidays observed).

4.4.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's traffic (Impact 4.4-1), stationary source (Impact 4.4-2), and interior noise (Impact 4.4-4) impacts would be less than significant and would not require mitigation.

Mitigation recommended for project demolition and construction impacts (Impact 4.4-5) would reduce the effect of the project to a less-than-significant level because it would require the construction contractors to take measures (i.e., limit hours of operation) to reduce the temporary noise effects of the project. Further, mitigation required for the project's exterior

noise impacts (Impact 4.4-3) would reduce this impact to a less-than-significant level because the project developers would be required to design the site and locate open space areas in areas with exterior noise levels less than 55 dB L_{dn}.

4.5 BIOLOGICAL RESOURCES

This section addresses biological resources and evaluates impacts that would result from implementation of the proposed project. Information presented in this section was collected during a survey of the project site and through a review of existing documentation. An EDAW biologist conducted a reconnaissance-level survey of the project site on June 12, 2003. The purpose of the survey was to document existing biological resources and to determine if the site supported or could support any special-status species or sensitive habitats. A focused burrowing owl survey was conducted by an EDAW biologist on March 31, 2004, to determine if burrowing owls were present and to assess their potential to occur.

4.5.1 ENVIRONMENTAL SETTING

GENERAL BIOLOGICAL RESOURCES

No native plant communities are present on the project site because the entire site was previously farmed, developed, or otherwise altered by activities associated with the abandoned agricultural research station. Developed portions of the site are primarily confined to the northeast and southeast corners of the property. The majority of the site is inactive agricultural land that was previously used for growing field crops, orchards, and vineyards. Remnant plantings in orchards and vineyards, and volunteer herbaceous agricultural plant species are present in many of the fallow fields. Many of these fields have been invaded by non-native weeds and other herbaceous plant species since agricultural production ceased. Trees on the project site include apple, walnut, plum, and a variety of ornamental and oak species. The oak trees, which include a number of species native to California, are located in a small field just west of Winchester Boulevard and south of onsite greenhouses. The oak trees were planted as a small orchard. All are less than 50 feet tall and many appear to be stunted in height and/or in poor health. No aquatic or wetland habitats are present on the project site.

Wildlife diversity on the project site is low and with few exceptions, similar to that found in surrounding residential areas. The poor diversity is likely attributable to the presence of surrounding urban development, absence of native habitats, and relatively small size of undeveloped open space (i.e., less than 2 acres) on the property. Common birds were the only wildlife species observed during the site visit. Birds observed included black phoebe, mourning dove, house sparrow, house finch, and American crow. During winter months, bird diversity is likely to increase as a number of common, native migratory birds such as white-crowned sparrow and golden-crowned sparrow are expected to visit the site. The project site provides little habitat for native mammals; no mammals were observed on the project site and only a few small mammal burrows were found during the site visit. Mammals expected to occur on the project site include non-native species that favor agricultural and urban habitats, including house mouse and black rat. No reptiles or amphibians were observed during the site visit but regionally common species such as gopher snake and western fence lizard may occur.

SENSITIVE BIOLOGICAL RESOURCES

Sensitive biological resources include those identified as such by California Department of Fish and Game (CDFG), the California Native Plant Society (CNPS), and the U.S. Fish and Wildlife Service (USFWS). Sensitive biological resources for this project also include those afforded protection under the City's General Plan.

Special-Status Species

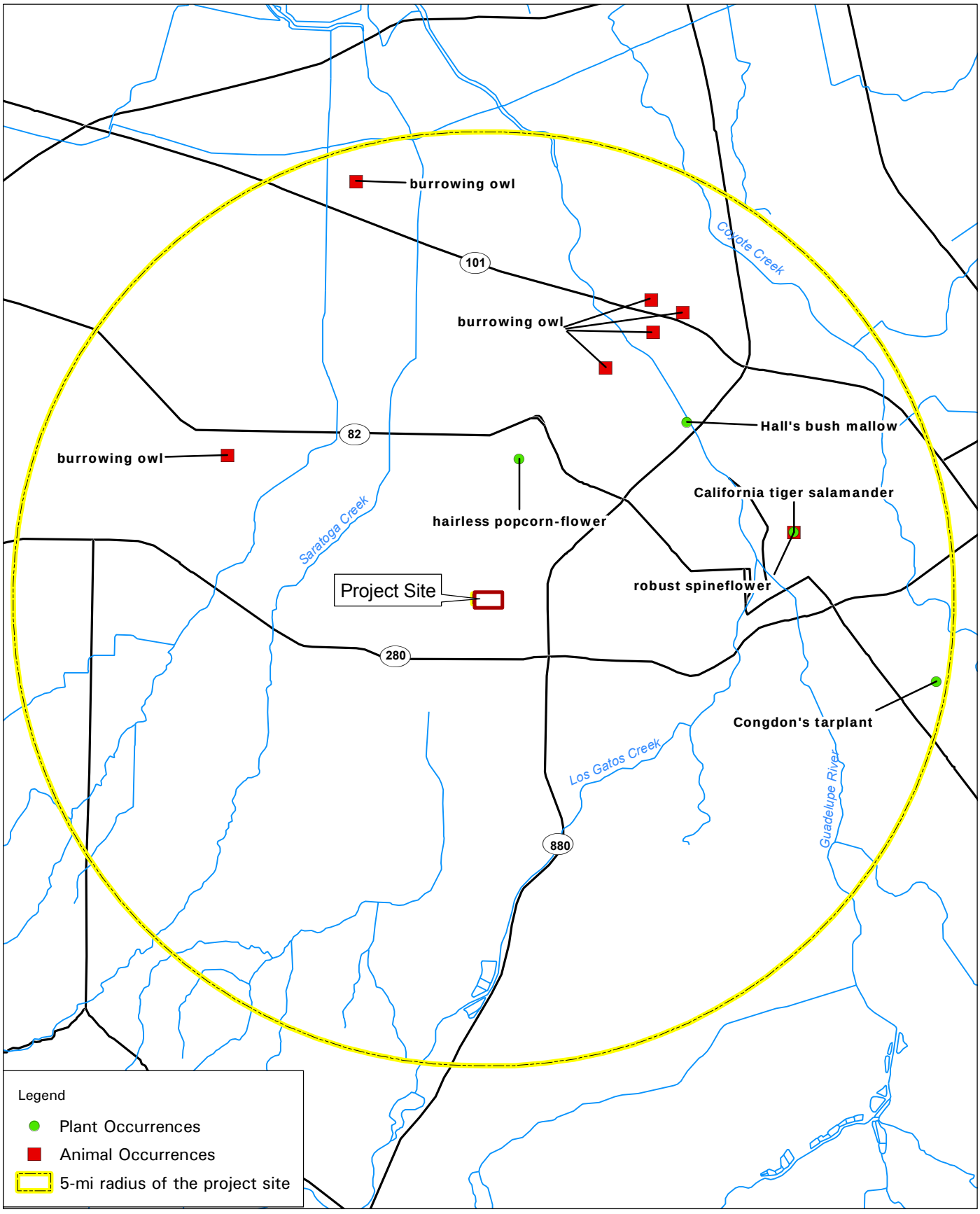
Special-status species include plants and animals in the following categories:

- species listed or proposed for listing as threatened or endangered under the federal Endangered Species Act (ESA) or the California Endangered Species Act (CESA);
- species considered as candidates for listing as threatened or endangered under ESA or CESA;
- wildlife species identified by CDFG as California Species of Special Concern;
- animals fully protected in California under the California Fish and Game Code;
- plants listed as Endangered or Rare under the California Native Plant Protection Act; and,
- plants on CNPS List 1B (plants rare, threatened, or endangered in California and elsewhere) or List 2 (plants rare, threatened, or endangered in California but more common elsewhere). The CNPS lists are used by both CDFG and USFWS in their consideration of formal species protection under ESA or CESA.

Recent and historical reports of special-status species in the vicinity of the project site were identified through a search of the California Natural Diversity Data Base (CNDDB). The CNDDB is a statewide inventory managed by the CDFG, which is continually updated with the locations and condition of the state's rare and declining species and habitats. Although the CNDDB is a reliable tool for site-specific information on sensitive biological resources, it should be noted that it contains only those records that have been submitted to CDFG and is not always up to date.

Six special-status species were reported to the CNDDB within a 5-mile radius of the project site (Exhibit 4-3): California tiger salamander (Federally Proposed as Threatened; California Species of Special Concern), burrowing owl (California Species of Special Concern), Hall's bush mallow (CNPS List 1B), robust spineflower (Federally Endangered, CNPS List 1B), Congdon's tarplant (CNPS List 1B), and hairless popcorn-flower (CNPS List 1A [presumed extinct]).

None of the six special-status species have been recorded on the project site and none are expected to occur. The California tiger salamander is not expected because this species requires vernal pools and other seasonal wetlands for breeding; suitable breeding habitat was not found on or adjacent to the site. Based on the results of a focused burrowing owl survey



Source: CNDDB (4/03)

Special-Status Species Map

EXHIBIT 4-3

Santa Clara Gardens Development Project Draft EIR

0 1 2
Miles

NORTH

EDAW

X 3T008.01 8/03

conducted on March 31, 2004, burrowing owl is not expected because no burrowing owls, evidence of their presence, or potential burrows suitable for nesting were found during the site visit and focused field survey. This species is presumed to be absent from the project site (EDAW 2004). None of the four special-status plants recorded in the vicinity are expected because they are all found in native habitat that is not present on the project site.

Sensitive Habitats

Sensitive habitats include Waters of the United States (U.S.), including wetlands and natural plant communities on the list of California Terrestrial Natural Communities Recognized by the CNDDB (CNDDB 2003). No sensitive habitats are present on or adjacent to the project site.

REGULATORY BACKGROUND

Because no special-status species or sensitive habitats are expected on the project site, state and federal regulations protecting sensitive biological resources are not applicable. Local protection of biological resources is limited to policies and programs included in the City of Santa Clara's General Plan. Section 5.13.2 of the General Plan includes the following polices and programs intended to provide protection for important biological resources.

Policies

- Support programs for the protection of fish and wildlife and their habitats, including rare and endangered species.
- Support conservation of riparian vegetation and habitat.

Programs

- Restrict development in areas that contain rare or endangered species of plants or animals or in special status species habitat areas unless suitable mitigation can be provided.
- Preclude construction in riparian corridors of structures or improvements, except certain trails, flood control projects, and culverts, fences, pipelines and bridges, and evaluate and mitigate where feasible, biological effects of any such construction.

None of these polices and programs are applicable to the proposed project because they are intended to protect sensitive biological resources and otherwise important wildlife habitat, which is not present on the project site.

Staff of the City of Santa Clara Planning Department indicate that there are no relevant tree ordinances or regulations protecting trees which would affect the property (Silva, pers. comm., 2003).

4.5.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

Implementation of the proposed project would have a significant impact if it were to result in:

- a substantial adverse effect (either directly or through habitat modifications) on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by CDFG or USFWS;
- a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations or by CDFG or USFWS;
- a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, or coastal) through direct removal, filling, hydrological interruption, or other means;
- substantial interference with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impediment to the use of native wildlife nursery sites;
- a conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
- a conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan; or
- a substantial reduction of habitat for a fish or wildlife species, or cause a fish or wildlife species population to fall below self-sustaining levels, or threaten to eliminate a plant or animal community, or cause a reduction in the number or range of an endangered, rare, or threatened species.

IMPACT ANALYSIS

Impact 4.5-1

Impacts on Common Plants and Wildlife. *Development of the project site would not substantially reduce available habitat for any common plant or wildlife species and would not cause any measurable effect on the local population of any native plant or animal. This impact would be less than significant.*

The project site supports a variety of common species but is not considered important habitat for any plant or animal because it is surrounded by urban development. No native plant communities are present. Development of the project site with urban land uses would remove less than 17 acres of fallow agricultural fields, which provide habitat for common plant and wildlife species. Given the anticipated broad disturbance of the site for soil preparation activities, all plant species would likely be removed or disturbed; some trees may be relocated to suitable locations within the project site. Some wildlife populations on the project site would

be reduced or eliminated. All species that would be disturbed by project development are regionally common. Implementation of the project or development option would not substantially reduce available habitat for any common plant or wildlife species and would not cause any measurable effect on the local population of any native plant or animal. This impact would be less than significant.

Impact 4.5-2

Impacts on Special-Status Species. *Burrowing owl is the only special-status species with potential to occur on the project site. Burrowing owls are not expected to occur on the project site because no burrowing owls, evidence of their presence, or potential burrows were observed during site visits or the focused burrowing owl survey conducted by qualified biologists. The project would have a less-than-significant impact on burrowing owls. Further, standard City practices require that a pre-construction survey for burrowing owl be conducted before commencement of construction activities for all development projects to ensure compliance with the provisions of the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). This would be a less-than-significant impact.*

A number of special-status species have been recorded in the vicinity of the project site. None of these species have been recorded on the project site. Of these, only burrowing owl occurs in agricultural and developed habitats similar to those found on the project site. Burrowing owl is not expected to occur on the project site because no burrows considered suitable for nesting, evidence of their presence (e.g., fecal pellets), or burrowing owls were observed by qualified biologists during the site visits and focused burrowing owl survey. The project would have a less-than-significant impact on burrowing owls. Further, the City requires that a pre-construction survey for burrowing owl be conducted before commencement of construction activities for all development projects to ensure compliance with the provisions of the Federal Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-711). The project's impacts to special-status species would be less than significant.

Impact 4.5-3

Impacts on Wetlands, Riparian and other Sensitive Habitats. *No wetlands, riparian or native habitat is present on or adjacent to the project site. This would be a less-than-significant impact.*

No wetlands, riparian or native habitat is present on or adjacent to the project site. Implementation of the project would have no adverse effects on sensitive habitats, including wetlands, as these habitats do not occur on the project site. This would be a less-than-significant impact.

Impact 4.5-4

Impacts to Wildlife Movement. *Implementation of the project would not substantially impede wildlife movement or the use of important nursery sites as the project site does not link any areas of open space that serve as important wildlife habitat. This would be a less-than-significant impact.*

The project site is surrounded by urban development and does not link any areas of open space that serve as important wildlife habitat. No migratory terrestrial wildlife species or animals requiring large territories inhabit the site. Implementation of the project would not

substantially impede wildlife movement or the use of important nursery sites. This would be a less-than-significant impact.

Impact 4.5-5

Consistency with Federal, State, and Local Plans, Policies, and Ordinances.
Implementation of the project would not affect any sensitive biological resources for which there are adopted federal, state, or local policies that protect these resources. This would be a less-than-significant impact.

There are a number of federal, state and local regulations that protect biological resources in the vicinity of the project site. However, these polices are generally only applicable to sensitive biological resources. As described above, implementation of the project would not have any adverse environmental effects on sensitive biological resources. Several trees, including oaks native to California, may be removed during project construction. Based on a survey by a qualified biologist, a majority of these trees were planted and appear to be in poor health. The City of Santa Clara does not have a tree ordinance or any general plan policies or programs that would protect onsite trees or other biological resources that occur on the project site. As a result, implementation of the project would not conflict or be inconsistent with any such policies. This would be a less-than-significant impact.

4.5.3 MITIGATION MEASURES

No mitigation is required for the following less-than-significant biological impacts.

4.5-1: Impacts to Common Plants and Wildlife.

4.5-2: Impacts to Special-status Species.

4.5-3: Impacts on Wetlands, Riparian, and other Sensitive Habitats.

4.5-4: Impacts to Wildlife Movement.

4.5-5: Consistency with Federal, State, and Local Plans, Policies, and Ordinances.

4.5.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

All of the project's biological resource impacts (Impacts 4.5-1 through 4.5-5) would be less than significant. No mitigation is required.

4.6 HAZARDS AND HAZARDOUS MATERIALS

Past agricultural operations at the project site resulted in the potential for soils with elevated pesticide concentrations. DGS conducted extensive testing at the site to determine if project site soils pose a potential health risk to future occupants. Based on soil testing results, a number of chemicals of potential concern were identified. Some onsite soils have concentrations of arsenic and dieldrin above EPA Preliminary Remediation Goals. Because of these conditions, DGS entered into a Voluntary Cleanup Agreement (VCA) with the California Department of Toxic Substances Control (DTSC). The VCA provides the basis for DTSC to exercise regulatory control and oversight for the investigation and ultimate cleanup of contamination on the project site.

Pursuant to the VCA, DGS has prepared a draft Removal Action Workplan (RAW) that identifies necessary remediation activities for soils with arsenic concentrations above background levels and dieldrin above cleanup levels. The objectives of the RAW are to (1) minimize exposure of future site residents to surface soils containing arsenic above 20 micrograms per kilogram (mg/kg), (2) ensure the mean concentration of dieldrin in an individual field is below 30 mg/kg, and (3) leave the site in a physical condition that is compatible with single-family residential use. The project includes unrestricted residential use of the property. This use would allow future residents to pursue a normal range of activities, including gardening, without restriction.

The draft RAW includes the excavation and removal of onsite soils with arsenic concentrations greater than 20 mg/kg. These soils would be hauled to an appropriately permitted disposal facility. Approximately 5,000 to 6,000 cubic yards (cy) of soil would be excavated and removed from the site, and under worst case conditions a similar volume would be brought to the site as fill. It is possible that some of the soil excavated from the proposed senior housing parking garages could be used as fill. Confirmation soil samples would be taken at the site to ensure that arsenic and dieldrin levels do not exceed cleanup goals. DTSC must approve the draft RAW and circulate it for review by public agencies and public before its implementation. DGS would be responsible for the cleanup of onsite soils in accordance with the VCA and RAW approved by DTSC and would be required to prepare an Implementation Report. Remediation activities outlined in the RAW are elements of the project and have been evaluated throughout this Draft EIR.

The goal of the following discussion is to identify as clearly as possible the extent and type of contamination found on the site and the actions proposed to reduce impacts to the general public, construction workers, and future users of the site. The following analysis is based on a Phase I Environmental Assessment Report (Phase I) and Phase II Site Characterization Report (Phase II) prepared by Environ International Corporation (2002 and 2003). A copy of these reports are included in this Draft EIR as Appendix D and E. Copies of Phase I and II reports, including sampling results, are also on file with the City of Santa Clara Planning Department and are available for review during regular business hours. These reports were peer reviewed by Hallenbeck/Allwest in July 2003.

4.6.1 ENVIRONMENTAL SETTING

The project site is not located within ¼ mile of an existing or proposed school, nor is the site within an airport land use plan or within 2 miles of a public or private airport. Further, the project site is surrounded by urban development and therefore would not be subject to wildland fires. As such, these issues are not evaluated further in this Draft EIR. The effects of the project on emergency access routes and plans is discussed in Section 4.10, Transportation and Circulation.

The U.S. EPA's Envirofacts website database was searched to identify potential hazardous contamination sites on or near the project site. The project is not listed in the Envirofacts database as a known hazardous material contamination site. No sites within ¼ mile of the project site have the potential to create a hazardous condition on the project site or in groundwater beneath the site. Further, investigations of groundwater beneath the site revealed that no contamination was present (please refer to Section 4.8, Hydrology and Water Quality) (U.S. EPA 2003). Therefore, this issue is not addressed further in this Draft EIR.

The site has been used as an agricultural research station since the 1920s. A variety of different buildings have been present on the site, some of which have historically been used for purposes such as storage or use of small quantities of pesticides. These buildings and storage areas included greenhouses, storage sheds and the administrative building basement. The small quantities of hazardous materials previously stored on the site have been removed. The field plots and greenhouses contain shallow surface soil residues from past use of agricultural chemicals such as pesticides and herbicides.

SOIL/GROUNDWATER

Based on the results of the Phase I report (Appendix D), project site operations could have resulted in elevated pesticide concentrations in onsite soils. Arsenic and dieldrin were identified as chemicals of potential concern and these pesticides could have percolated to deeper soils and groundwater. The report recommended that soil samples and testing be conducted to determine the concentrations of contaminants in onsite soils.

The Phase I report also indicated that in 1973, an evaporation bed was installed to dispose of diluted pesticide wastes (Exhibit 4-4). The evaporation bed was located adjacent to and west of the equipment wash station, next to the pesticide shed. Use of the evaporation bed was discontinued in 1985. Soils beneath the bed were tested for the presence of pesticides. Pesticide levels in these soils were below regulatory standards and were removed from the site to minimize potential contamination risk. The Phase I report concluded that operation of the evaporation bed had a low potential to contaminate soils at the site (Environ 2002).

The Phase II report (Appendix E) evaluated whether current or past chemical and pesticide use at the site resulted in soil concentrations that pose a potential threat to human health and the environment. Over 50 soil samples were collected from onsite locations. These samples

were tested for 14 chemicals and over 60 pesticides commonly used before 1979. Locations of soil samples are shown in Exhibit 4-5.

The Phase II Site Characterization was conducted under the assumption that future land use would be unrestricted (i.e., that residential development would be a possibility). Receptors that could come in contact with onsite contaminated soils include construction workers and residents. The report assumed that receptors could be exposed to onsite contaminated soils through ingestion of soil, dermal contact with soil, and inhalation of airborne particles released from soil. Inhalation would be the main concern during cleanup. Evaluation of the project's potential to release hazardous materials into the atmosphere are addressed in Section 4.3, Air Quality, of this Draft EIR.

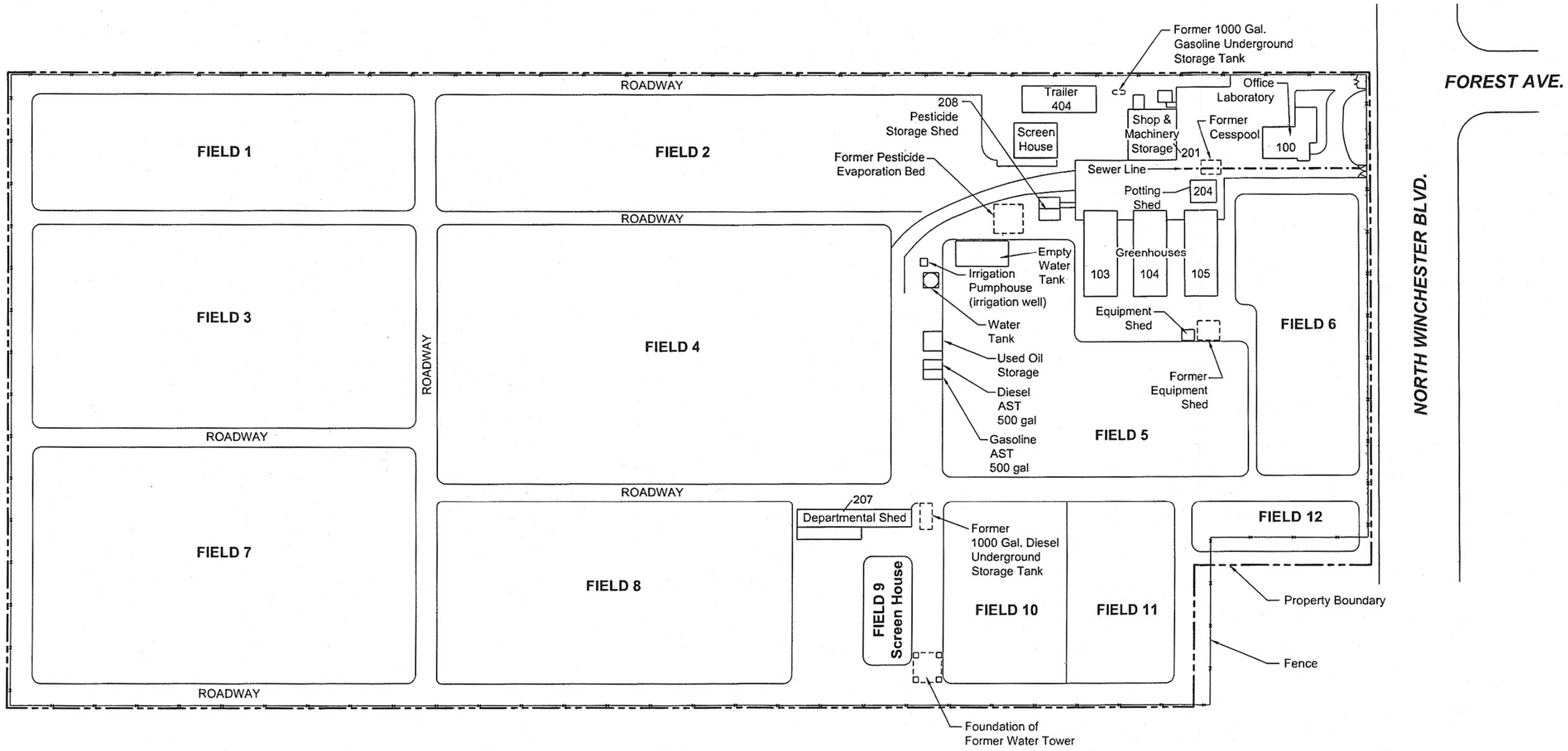
The Phase II Site Characterization indicated that arsenic and dieldrin were found in surface soils (0.5 to 3 feet below ground surface [bgs]) at concentrations above U.S. EPA Preliminary Remediation Goals (PRGs). The elevated concentrations of dieldrin found in Fields 1, 3, and 7 were isolated and limited in their horizontal and vertical extent. No remediation of dieldrin would be necessary (Environ 2003). Arsenic concentrations in shallow surface soils (i.e., 0 to 0.5 feet bgs) in the eastern portion of Field 4 were above background concentrations normally found in soils in northern Santa Clara County. In addition, elevated concentrations of arsenic were found in a small area (less than 5 square feet) adjacent to the dirt road in front of the former screen house, and in the dirt road between Fields 11 and 12. The Phase II report indicated that these arsenic concentration levels could be potentially carcinogenic to construction workers and residents and that removal of these soils would minimize potential health risks. In response, DGS entered into a VCA with the DTSC to cleanup and remove contaminated onsite soils.

SEPTIC TANK AND LEACH FIELD

Before 1977, wastewater generated in the administrative building was discharged into a sewage leach pit. The leach pit was located west of the administrative building and was abandoned in 1977 in accordance with Uniform Plumbing Code Standards for cesspools (Environ 2002). Soil samples beneath the leach pit were collected and analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), organochlorine pesticides, total petroleum hydrocarbons (TPH), and metals/inorganics. VOCs, SVOCs, organochlorine pesticides and TPH were not detected in soil samples, but metals were found at low concentrations (Environ 2003). The metal concentrations were well within background levels for soils in the area. Therefore, there is no evidence that operation of the sewer leach pit adversely affected onsite soils or groundwater (Environ 2003).

ASBESTOS

A limited asbestos survey of project facilities was conducted in 1989. The survey found that asbestos was present in several buildings primarily in heating ducts, insulation material in bench top ovens, planter boxes, vent pipes, and hard-board bench tops (Environ 2002).



Source: Environ 9/02

Layout of the Former Research Facility

EXHIBIT 4-4

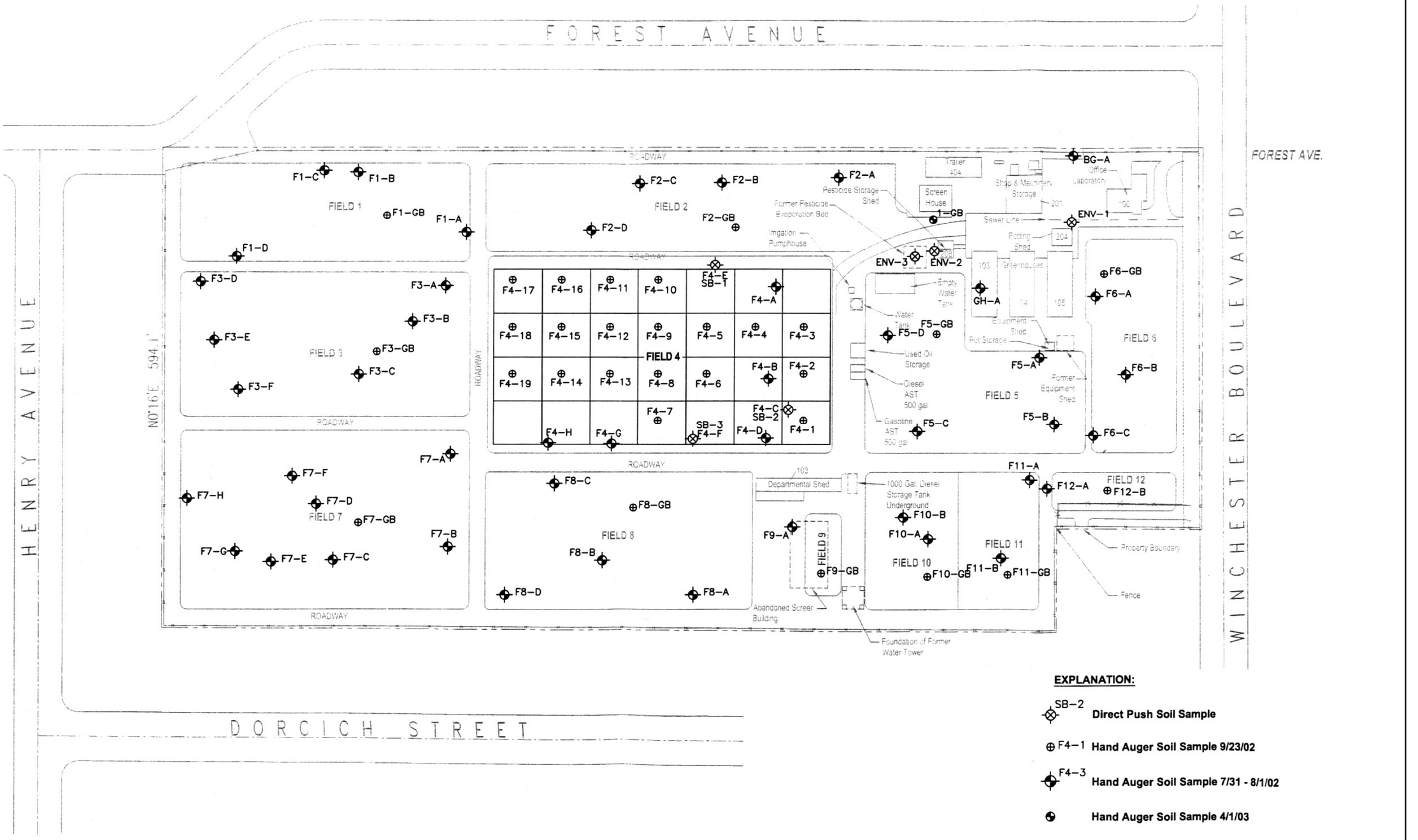
Santa Clara Gardens Development Project Draft EIR

G 3T008.01 08/03

0 50 100 Feet

NORTH

EDAW



Source: Environ 4/29/03

Location of Soil Samples

EXHIBIT 4-5

Santa Clara Gardens Development Project Draft EIR

G 3T008.01 10/03

0 60 120 Feet

NORTH

EDAW

LEAD PAINT

The use of lead as an additive to paint was discontinued in 1978. Although a lead-based paint survey was not performed at the site because site facilities were constructed before 1978, it is likely that lead-based paint is present in many of the buildings. The Phase I report recommended that the laboratory/office building be surveyed for lead-based paint if this building were to remain and could be occupied (Environ 2002).

PCBS

Several pole-mounted transformers and fluorescent light ballasts were observed on the project site. These objects may contain polychlorinated biphenyls (PCBs). The transformers were served by Pacific Gas and Electric (PG&E) which would be responsible for their removal before project construction. Fluorescent light ballasts would be removed during demolition of existing buildings.

PETROLEUM HYDROCARBONS

A 1,000-gallon gasoline underground storage tank (UST), located adjacent to the maintenance shop, and a 1,000-gallon diesel UST located adjacent to a storage building were removed from the project site in 1993. Before removal, the USTs were inspected and found to be in good condition with no evidence of leakage (i.e., stained soil, holes). Soil samples beneath the USTs were collected and analyzed for the presence of petroleum hydrocarbons. The analysis indicated that no petroleum hydrocarbons were present in soils beneath the USTs (Environ 2003).

PESTICIDE RESIDUES

The soil sample analysis results in portions of the project site indicate that 7 organochlorine pesticides, diquat, and 13 inorganic compounds were detected. A comparison of the pesticide results with U.S. EPA Region IX PRGs indicated that only dieldrin and arsenic exceeded applicable PRGs. However, dieldrin was not considered a chemical of potential concern because only 3 of 60 soil samples had concentrations above PRGs in surface soils and the concentrations were of limited horizontal and vertical extent. Therefore, dieldrin in onsite soils would not pose a significant adverse human health risk effect (Environ 2003). DGS has entered into a VCA with DTSC and prepared a draft RAW that identifies necessary remediation activity for soils contaminated with arsenic.

Radon is an odorless, invisible gas that naturally occurs in soils. Natural radon levels vary and are closely related to geologic formations. It cannot be detected without specialized equipment. Radon may enter buildings through basement sumps or other openings.

The United States Environmental Protection Agency (EPA) has established the recommended safe radon level at 4 pCi/L. The EPA has prepared a map dividing the country into three Radon Zones; Zone 1 for those areas with the average predicted indoor radon concentration in residential dwellings exceeding the EPA action limit of 4 pCi/L; Zone 2 for those areas where

the average predicted radon level is between 2 and 4 pCi/L; and Zone 3 for those areas where the average predicted radon level is below 2 pCi/L.

According to the EPA Map of Radon Zones, the subject property, including all of Santa Clara County and most of California, is in Zone 2, where the predicted radon levels are between 2.0 and 4.0 pCi/L.

REGULATORY SETTING

Hazardous materials handling is subject to numerous laws and regulations at all levels of government. Table 4-11 lists the authority of federal and state regulatory agencies that oversee hazardous materials handling and management. A summary of the most pertinent regulations is provided below.

Hazardous Materials Management

Federal and state laws require detailed planning to ensure that hazardous materials are properly handled, used, stored and disposed of, and if such materials are accidentally released, to prevent or to mitigate injury to health or the environment. The Federal Emergency Planning and Community Right to Know Act (EPCRA) of 1986 impose hazardous materials planning requirements to help protect local communities in the event of accidental release.

The California Hazardous Materials Release Response Plans and Inventory Law of 1985 (Business Plan Act) requires preparation of Hazardous Materials Business Plans and disclosure of hazardous materials inventories. A Business Plan includes an inventory of hazardous materials handled, facility floor plans showing where hazardous materials are stored, an emergency response plan, and provisions for employee training in safety and emergency response procedures (California Health and Safety Code, Division 20, Chapter 6.95, Article 1). Statewide, DTSC has primary regulatory responsibility for management of hazardous materials, with delegation of authority to local jurisdictions that enter into agreements with the state. Local agencies, including the Santa Clara County Department of Environmental Health and the City of Santa Clara Fire Department administer laws and regulations.

The Santa Clara Fire Department Hazardous Materials Division acts as a technical consultant advising on site construction, process installation and the safe use and handling of hazardous materials. They also train fire department members on safety hazard mitigation, incident management, hazardous assessment and legal obligations (City of Santa Clara 2003).

Storage of hazardous materials in underground tanks is regulated by the State Water Resources Control Board (SWRCB), which has overall responsibility for implementing all regulations set forth in the California Code of Regulations (CCR). State standards cover installation and monitoring of new tanks, monitoring of existing tanks, and corrective actions for removed tanks. Implementation of state underground storage tank regulations, including permitting for all hazardous materials storage, is enforced locally by the City of Santa Clara Fire Department.

Table 4-11
Summary of Hazardous Materials Regulatory Authority

Regulatory Agency	Jurisdiction	Authority
Federal		
Environmental Protection Agency (EPA)	Federal	Federal Water Pollution Control Act Clean Air Act Resource Conservation & Recovery Act Federal Emergency Planning and Community Right to Know Act (EPCRA) Comprehensive Environmental Response, Compensation & Liability Act Superfund Amendments & Reauthorization Act Federal Insecticide, Fungicide & Rodenticide Act
Department of Transportation (DOT)	Federal	Hazardous Materials Transportation Act
Occupation Safety and Health Administration (OSHA)	Federal	Occupational Safety & Health Act
State		
Department of Toxic Substances Control (DTSC)	Statewide	Health and Safety Code CCR Titles 17, 19, & 22
Department of Industrial Relations (Cal-OSHA)	Statewide	California Occupational Safety & Health Act
Department of Transportation (Caltrans)	Statewide	Hazardous materials transportation
Public Utilities Commission (PUC)	Statewide	Natural gas pipelines; General Order No. 112-D
Office of Emergency Services (OES)	Statewide	Hazardous Materials Release/Response Plans Acutely Hazardous Materials Law
State Fire Marshall	Statewide	Uniform Fire Code, CCR Title 19 Hazardous liquid pipelines
Health & Welfare Agency	Statewide	Safe Drinking Water & Toxic Enforcement Act
Integrated Waste Management Board	Statewide	AB 939
State Water Resources Control Board (SWRCB)	Statewide	Porter-Cologne Water Quality Control Act CCR Title 23
San Francisco Bay Regional Water Quality Control Board (RWQCB)	Regional	Underground Storage Tanks NPDES permit requirements
Bay Area Air Quality Management District (BAAQMD)	Regional	California Clean Air Act, BAAQMD Regulations
Local		
Santa Clara County Environmental Health Department	County	Hazardous materials disclosure Underground storage tanks Contaminated sites cleanup CCR Title 22 CEQA implementation
County Agricultural Commissioner	County	Agricultural chemicals regulation
Santa Clara Sewer Utility	Local	Wastewater treatment
City of Santa Clara Fire Department	Local	Hazardous materials disclosure Underground storage tanks Emergency response

Sources: EDAW 2004

Worker Safety

The California Occupational Safety and Health Administration (Cal-OSHA) and the Federal Occupational Safety and Health Administration (Fed-OSHA) are the agencies responsible for assuring worker safety in the handling and use of chemicals in the Occupational Safety and Health Act of 1970, Fed-OSHA has adopted numerous regulations pertaining to worker safety, contained in the Code of Federal Regulations Title 29 (29 CFR). These regulations set standards for safe workplaces and work practices, including standards relating to hazardous material handling. Cal-OSHA assumes primary responsibility for developing and enforcing state workplace regulations. Because California has a federally approved OSHA program, it is required to adopt regulations that are at least as stringent as those found in 29 CFR. Cal-OSHA standards are generally more stringent than federal regulations.

Cal-OSHA regulations about the use of hazardous materials in the workplace, as detailed in CCR Title 8 include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA enforces hazard communication program regulations that contain training and information requirements, including procedures for identifying and labeling hazardous substances, communicating hazard information related to hazardous substances and their handling, and preparation of health and safety plans to protect workers and employees at hazardous waste sites. The hazard communication program requires that Material Safety Data Sheets (MSDSs) be available to employees and that employee information and training programs be documented.

Emergency Response to Hazardous Materials Incidents

California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The plan is managed by the State Office of Emergency Services (OES), which coordinates the responses of other agencies including the Cal-EPA, the California Highway Patrol (CHP), California Department of Fish and Game, San Francisco Bay Regional Water Quality Control Board, Santa Clara County Environmental Health Department, Santa Clara County Fire Department, and the City of Santa Clara Fire Department.

Hazardous Materials Transport

The U.S. Department of Transportation regulates hazardous materials transportation between states. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the CHP and the California Department of Transportation (Caltrans). Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads.

In addition, DTSC requires a Transportation Plan as part of the RAW. This plan requires the transportation route to be identified, a contingency plan in case of emergency, traffic control and flagging for entrance and exit of trucks and vehicles to the site, and covering of trucks to prevent release of contaminated soil into the air during transport.

Hazardous Waste Management

The California DTSC regulates the generation, transportation, treatment, storage, and disposal of hazardous waste under the Federal Resource Conservation and Recovery Act (RCRA) and the State Hazardous Waste Control Law. Both laws impose comprehensive regulatory systems for handling hazardous waste in a manner that protects human health and the environment.

4.6.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in significant hazardous materials impacts if it would:

- create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment or through the routine transport, use, or disposal of hazardous materials, or
- result in safety hazards to people residing or working in the project area.

The discussion below addresses the physical impacts resulting from the presence of hazardous materials on the project site and proposed use of hazardous materials during construction. Those impacts on the environment that might reasonably be anticipated to occur as a result of cleaning up the existing contamination (generally called remediation) are addressed in other parts of this Draft EIR. For example, the impacts of traffic generated by cleanup operations are discussed under the transportation section; impacts from dust generated by excavating and removing contaminated soil are discussed in the air quality section.

IMPACT ANALYSIS

Impact 4.6-1

Create a Safety Hazard to Construction Workers and Adjacent Residences.

Remediation activities would be completed in accordance with the provisions of the approved RAW under the oversight of the DTSC. The development contractors would be required to comply with state health and safety regulations during demolition and construction activities. Because remediation activities would occur in accordance with measures outlined in the RAW and demolition activities would comply with OSHA requirements, impacts related to creation of significant safety hazards for construction workers or adjacent residents would be less than significant.

The Phase I and II reports identified presence of elevated concentrations of arsenic in onsite soils as a result of past pesticide use. Further, asbestos, lead-based paint and PCBs are also likely to be present in onsite buildings and power poles. DGS entered into a VCA with DTSC

and prepared a draft RAW that identifies the necessary remediation activities to excavate and remove onsite contaminated soils. The approved RAW would require the preparation of a site Health and Safety Plan. This plan would outline measures that would be employed to protect construction workers and residents from exposure to hazardous materials during remediation activities. These measures could include, but would not be limited to installing security barriers, posting notices, limiting access to the site; air monitoring, watering, and installing wind fences. Further, development contractors would be required to comply with state health and safety standards for all demolition work. This would include compliance with OSHA and Cal-OSHA requirements regarding exposure to asbestos and lead-based paint. Because remediation activities would occur in accordance with measures outlined in the RAW and demolition activities would comply with OSHA requirements, the potential to expose construction workers and residents to safety hazards as a result of remediation and demolition activities would be less than significant.

Impact 4.6-2

Create a Significant Hazard to the Public or the Environment. *The project would not involve the routine storage, use, or transportation of any hazardous materials. The use, storage and handling of hazardous substances during remediation activities and removal of existing buildings (e.g., contaminated soils, asbestos, lead-based paint) and during construction (e.g., fuels, asphalt) would occur in accordance with the approved RAW and applicable local, state, and federal laws. Therefore, impacts related to creation of significant hazards to the public through transport, use, disposal and risk of upset would be less than significant.*

As a result of pesticide use related to past agricultural practices on the site, arsenic and dieldrin concentrations in onsite soils are a potential health risk of concern. As described above, DGS has prepared a draft RAW that identifies necessary remediation activities for unrestricted residential use, including excavation and removal of onsite contaminated soils, and importation of clean fill material. The project includes measures that ensure the safe transport, use, and disposal of contaminated soil and building debris removed from the site. The development contractors would be required to comply with the approved RAW and applicable local, state, and federal laws. The RAW outlines measures for specific handling and reporting procedures for hazardous materials, and disposal of hazardous materials removed from the site at an appropriate offsite disposal facility. Analysis and mitigation measures addressing the potential release of hazardous materials into the atmosphere are addressed in Section 4.3, Air Quality, of this Draft EIR.

The project would include the construction of up to 110 single-family residences, 165 senior housing units, a 1 acre municipal park, and infrastructure typically associated with residential development. None of these uses would involve the use, storage or transport of hazardous materials on a routine basis. During construction, minor use, storage and handling of hazardous substances, including fuel and asphalt, would be expected. This would be done in accordance with applicable local, state and federal regulations, including Cal-OSHA requirements, and manufacturers' instructions. Because all activities would be in compliance

with applicable laws pertaining to the handling, transport, and storage of hazardous materials, this impact would be less than significant.

4.6.3 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

4.6-1: Create a Safety Hazard for Construction Workers and Adjacent Residences.

4.6-2: Create a Significant Hazard to the Public or Environment.

4.6.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's hazards and hazardous materials impacts (Impact 4.6-1 and 4.6-2) would be less than significant. No mitigation is required.

4.7 EARTH RESOURCES

The purpose of this analysis is to determine potential geological impacts associated with construction and implementation of the proposed project.

4.7.1 ENVIRONMENTAL SETTING

REGIONAL GEOLOGY

The project site is located in the central Santa Clara Valley, which is bordered by mountain ranges of the Coast Range Geomorphic Province (Exhibit 4-6). The Coast Ranges are characterized by predominantly northwest trending mountains, valleys and faults. The hydrologic sub-basin of the San Francisco Bay hydrologic basin (South Bay unit) is a broad alluvial valley sloping north toward San Francisco Bay. Based on mapping by Wesling and Helley (1989) (Exhibit 4-7), the area is underlain by distal alluvial fan deposits of Holocene age. The alluvium is composed of unconsolidated interbedded gravel, sand silt and clay, which becomes progressively finer-grained toward San Francisco Bay and contains a series of laterally extensive marine clay layers (Environ 2003). An evaluation of the project site confirmed that clay and silt deposits, with a smaller fraction of sand, underlie the project site. Mapping conducted by Wesling and Helley (1989) indicates that a trace of a Late Holocene channel ridge (a ridge line to an old former creek channel) runs through the central portion of the project site.

LOCAL GEOLOGY

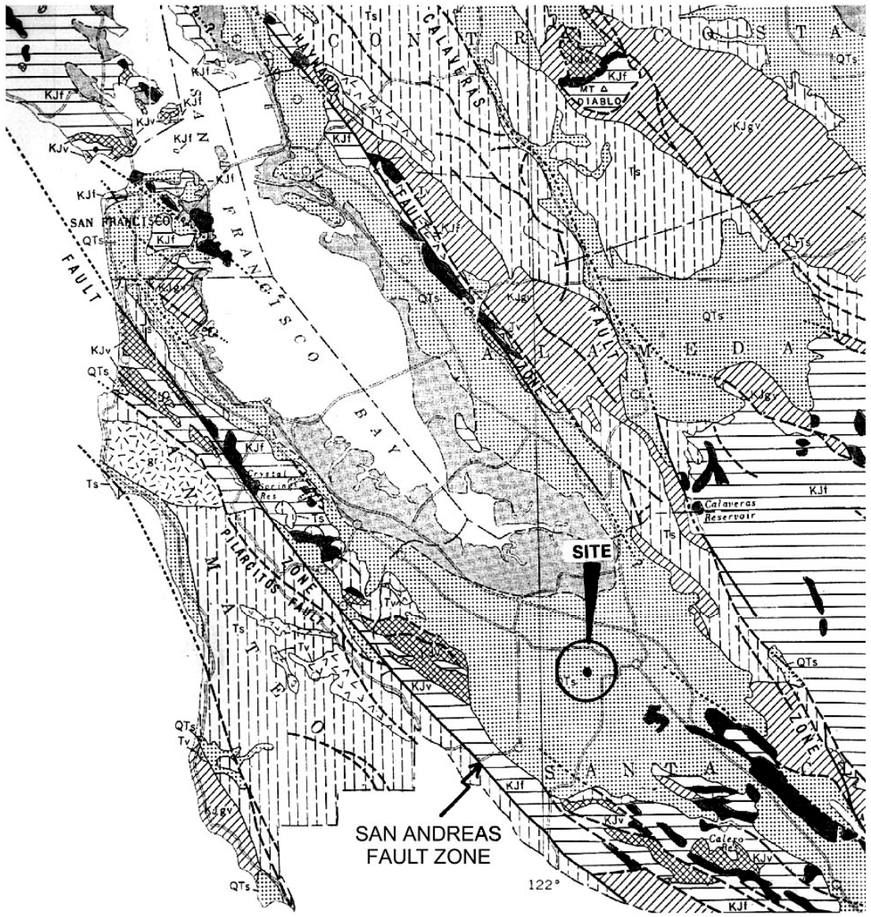
Topography at the project site is relatively flat, approximately 0.4 to 0.5% sloping southwest to northeast. The project site is at an elevation of approximately 125 feet above mean sea level (amsl) (Environ 2003). Layers of gravel, clay, sandy clay, gravelly clay and blue clay have been observed beneath the project site (Environ 2003).

FAULTING AND SEISMICITY

The Coast Range Geomorphic Province is a geologically young, seismically active area. The uplift of the Coast Ranges and associated seismic activity is the result of movement along the San Andreas Fault System, which consists of three active faults: the San Andreas Fault, the Hayward Fault, and the Calaveras Fault. From the project site, the San Andreas Fault is located approximately 8.8 miles southwest, the Hayward Fault is approximately 8.8 miles northeast, and the Calaveras Fault is approximately 11.2 miles northeast (see Exhibit 4-6). Seismicity of central coastal California is dominated by the San Andreas Fault system. No active or potentially active faults are mapped on or in close proximity to the project site. Further, under the Alquist-Priolo Earthquake Fault Zoning Act, the project site is not in a state designated active earthquake fault zone.

STRONG GROUND MOTION

The project area would be subject to strong ground shaking associated with earthquakes on faults of the San Andreas Fault system. The project site is located in a region that has a history



EXPLANATION

AGE

1 Mud

2 QTs Unconsolidated sediments

3 Tsl Moderately consolidated to well-consolidated sedimentary rocks

4 Tv Volcanic rocks

5 KJf Franciscan assemblage
KJf – sandstone and shale chert, metamorphic rocks, limestone, sheared rocks (melange)
KJv – volcanic rocks

6 KJgv Sandstone, shale, and conglomerate; locally in oldest part basaltic volcanic rock and chert

7 Serpentine and peridotite

8 Gr Granitic rocks

QUATERNARY

TERTIARY

JURASSIC AND CRETACEOUS

Contact
Dashed where approximately located.

Fault known to be active
Dotted where concealed

Fault not known to be active
Dotted where concealed. Only selected faults shown. Query indicates uncertainty as to existence of fault

Source: Allwest Geoscience 7/03

Regional Geologic Map

EXHIBIT 4-6

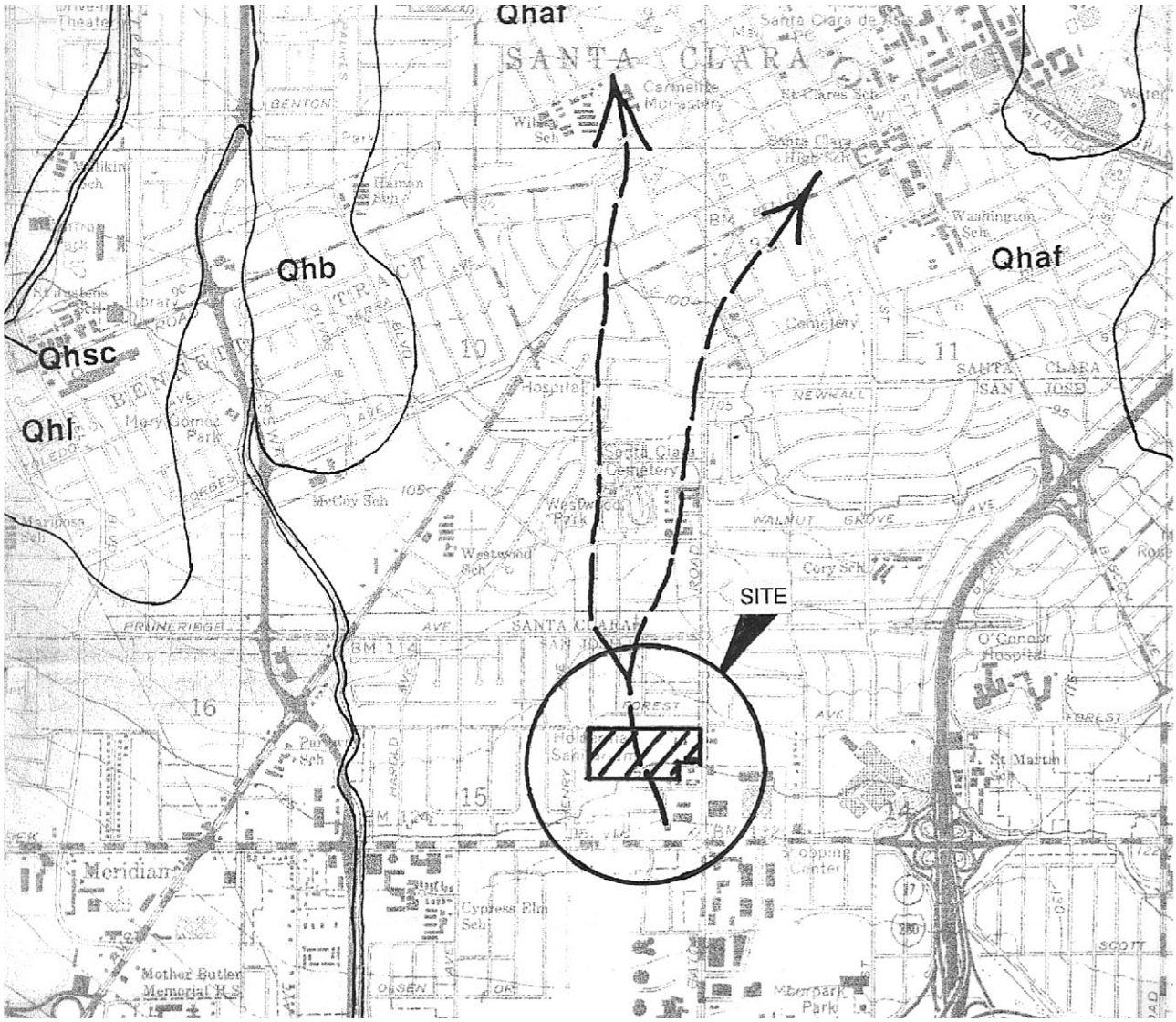
Santa Clara Gardens Development Project Draft EIR

G 3T008.01 10/03

0 5 10 Miles

NORTH

EDAW



Source: Wesling & Helley 1989

Quarternary Geologic Map

EXHIBIT 4-7

Santa Clara Gardens Development Project Draft EIR

G 3T008.01 08/03

0 1000 2000 Feet

NORTH

EDAW

of strong seismic activity. Earthquakes are classified by their magnitude (M), a measure of the amount of energy released during the event. Earthquakes of M 6.0 to M 6.9 are classified as moderate. Earthquakes between M 7.0 and M 7.9 are classified as major, and earthquakes of M 8.0 or greater are classified as great. Faults located in the vicinity of the project site could potentially generate earthquakes with magnitudes greater than 6.0. The Modified Mercalli Scale for Earthquake Intensity is presented in Table 4-12.

Table 4-12
The Modified Mercalli Scale for Earthquake Intensity

Intensity Scale	Effects
XII	Damage total or nearly total, practically all works of construction are greatly damaged or destroyed. Roads, rails, and underground utilities are severely damaged
XI	
X	Major Damage, including partial to complete collapse of weak masonry and frame buildings and moderate damage of stronger structures.
IX	
VIII	Moderate damage including toppled chimneys, cracked stucco, frames shifted on foundations. Damage more severe to weak walls and masonry.
VII	
VI	Minor Damage including cracks in chimneys and walls. Furniture moved and items knocked off shelves.
V	Felt by most people, some awakened from sleep. Some objects are moved. No structural damage.
IV	
III	Felt indoors by some people.
II	Not generally felt by people
I	

HISTORIC EARTHQUAKES

A review of historic earthquake activity from 1735 to 1999 indicates that 8 earthquakes of M 6.0 or greater have occurred within a 50-mile radius of the project site (Table 4-13). An additional 32 earthquakes of M 5.5 to M 5.9 occurred during this same time period (USGS 2003).

The most recent historic earthquake that occurred near the project site is the October 17, 1989, Loma Prieta earthquake, approximately 19 miles south of the project site. This earthquake occurred on a previously unknown fault that closely parallels the surface trace of the San Andreas Fault. Damage in the region of the epicenter was worst where pre-existing landslides became re-activated by ground shaking and where ground was previously cracked and ruptured from the Great Earthquake of 1906. Based on California Strong Motion Instrumentation Program (CSMIP) Strong-Motion Records for the Santa Cruz Mountains (Loma-Prieta) earthquake, peak horizontal ground acceleration within 5 miles of the property varied from 0.09g to 0.17g.

Table 4-13 Historic Earthquakes within 50 Miles of Santa Clara Gardens Boulevard Project Site		
Date	Approximate Distance to Site (mi.)	Quake Magnitude (M)
November 26, 1858	25	6.1
October 8, 1865	23	6.3
October 21, 1868	41	6.8
April 24, 1890	11	6.0
June 20, 1897	8	6.2
April 18, 1906	39	7.7
July 1, 1911	13	6.6
April 24, 1984	12	6.2
October 18, 1989	22	7.1
Source: USGS National Earthquake Information Center		

GROUNDWATER

One groundwater well is located on the project site. This well has been appropriately abandoned in accordance with the requirements of the Santa Clara Valley Water District. It was used for irrigation of onsite agricultural fields but is no longer in use. The well is screened from a depth of 200 to 250 feet below ground surface (bgs); the depth to groundwater in this well is encountered at approximately 140 feet bgs (Environ 2003).

There is no site-specific information on shallow groundwater. However, a Soil and Groundwater Report was prepared for the Dunn-Edwards Corporation Facility (690 Winchester Boulevard), located 1/8 mile north of the project site. The report indicated that shallow groundwater was encountered between 20 and 30 feet bgs and flows east toward San Francisco Bay (Environ 2003).

SOILS

According to documentation provided by the University of California for the irrigation well at the project site, gravel was observed to a depth of 39 feet. The gravel was underlain by layers of clay, sandy clay, gravelly clay and gravel to a depth of 360 feet. Blue clay was reported at various depths below 70 feet bgs (Environ 2003).

LIQUEFACTION/LANDSLIDE/LATERAL SPREADING

Liquefaction occurs when water-saturated soils composed of silt or gravel are subjected to shaking by an earthquake. If the water is unable to drain, the soil assumes the property of a heavy liquid and no longer provides adequate support for foundations, buildings or upper layers of soil. Such liquefaction can cause severe damage to structures as a result of settling, tilting, or floating.

According to the California Division of Mines and Geology Seismic Hazard Zone Map for the San Jose West Quadrangle (2002), the project site is located on the edge of a California Seismic Hazard Zone for liquefaction (Exhibit 4-8). Liquefaction zones identify where the stability of foundation soils must be investigated, and countermeasures undertaken in the design and construction of buildings for human occupancy. Statutes require that cities and counties use these zones as part of their construction permitting process.

The California Division of Mines and Geology (CDMG) groundwater depth in the vicinity of the project site varies from 30 to 40 feet bgs. The report also indicates susceptibility of the underlying soil to liquefaction is low to moderate.

Because of the very low topographical relief of the project site, the relative susceptibility of the underlying soil to seismically induced landslide or lateral displacement is considered very low.

REGULATORY SETTING

State of California, Uniform Building Code

All development in the State of California must comply with the provisions of the California Uniform Building Code (UBC) at a minimum. The UBC provides minimum requirements for grading, building siting, development, and seismic design. Typically, most local jurisdictions adopt building standards that are at least as stringent, if not more stringent than the UBC.

City of Santa Clara

Geologic resources and geotechnical hazards are primarily governed by local jurisdictions. The City of Santa Clara has adopted the 1997 Uniform Building Code. In recognition of the unique risk of earthquake hazard in the Santa Clara Valley, the City has amended the UBC through Resolution No. 6976. This Resolution, provided in Appendix F of this Draft EIR, includes provisions designed to address earthquake related building standards.

Alquist-Priolo Earthquake Fault Zoning Act

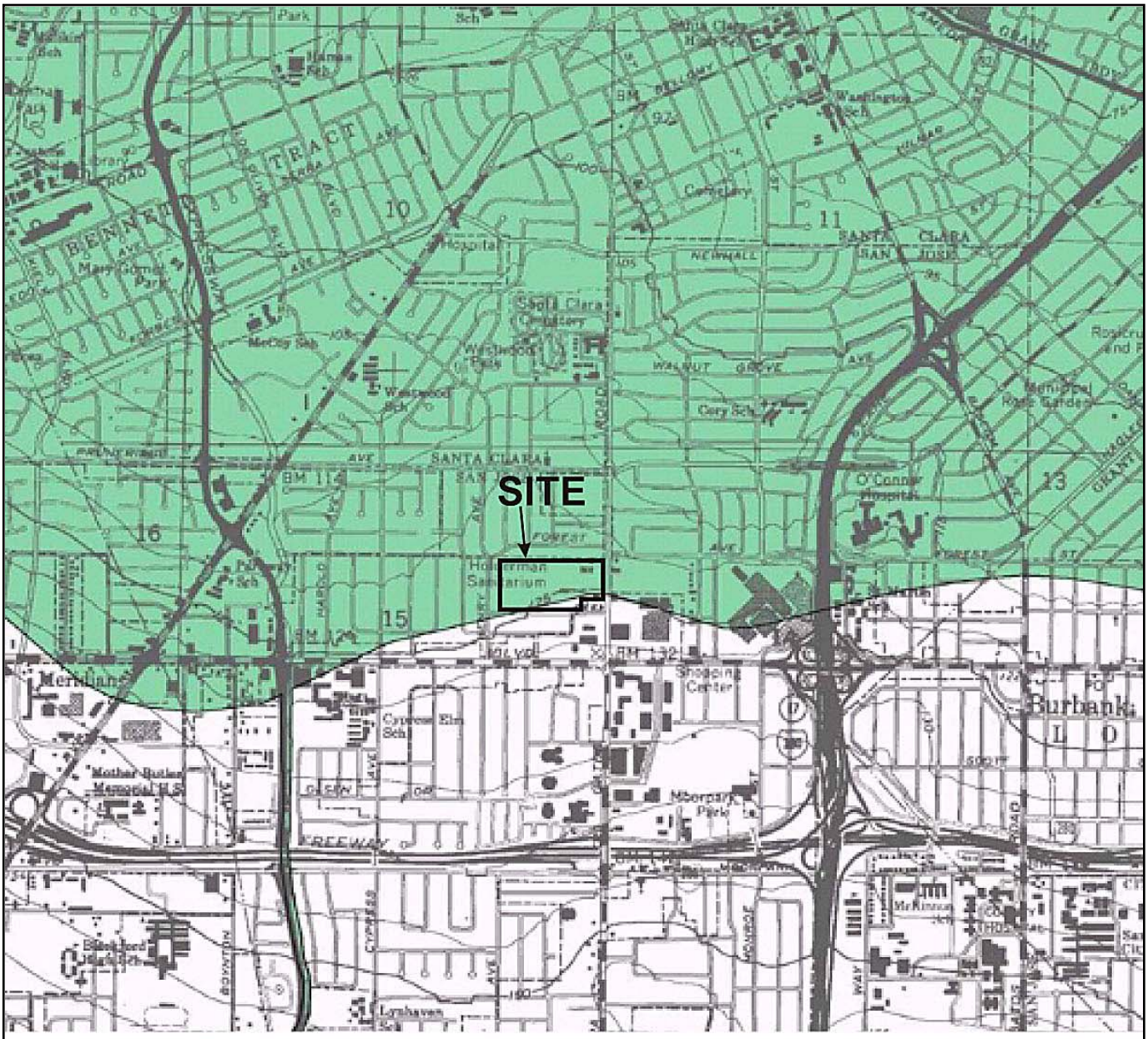
The Alquist-Priolo Earthquake Fault Zoning Act's main purpose is to prevent the construction of buildings used for human occupancy on the surface trace of active faults. The Act only addresses the hazard of surface fault rupture and is not directed toward other earthquake hazards.

4.7.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in significant earth resources impacts if it would:

- expose people or structures to substantial adverse effects including the risk of loss, injury or death involving:



Source: California Dept of Conservation – Division of Mines & Geology

Geologic Hazard Map

EXHIBIT 4-8

Santa Clara Gardens Development Project Draft EIR

0 1000 2000 Feet

NORTH

EDAW

G 3T008.01 08/03

- rupture of a known earthquake fault,
- strong seismic ground shaking,
- seismic-related ground failure, including liquefaction, or
- landslides.

- result in substantial soil erosion or loss of topsoil;

- be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-project site landsliding, lateral spreading, subsidence, liquefaction or collapse;

- be located on expansive soil, as defined in Table 18-1-B of the UBC, creating substantial risks to life or property; or

- have soils incapable of adequately supporting the use of septic tanks or alternative disposal systems where sewers are not available for the disposal of wastewater.

IMPACT ANALYSIS

Impact 4.7-1

Seismic-Related Impacts. *The project site is not located in a designated fault zone of the Alquist-Priolo Earthquake Faulting Zoning Map, nor were any active faults identified on project site. Therefore, ground rupture would not be anticipated at the project site. The project site is located in an area subject to strong ground shaking, which could result in severe structural damage. Onsite buildings would be designed in accordance with current UBC standards and earthquake design provisions adopted by the City in Resolution No. 6976. Because the project and the development option would incorporate design measures to prevent structural damage from earthquakes, this would be a less-than-significant impact.*

Fault rupture can occur along fault systems during seismic events (earthquakes). If the rupture extends to the surface, movement on a fault is visible as a surface rupture. The occurrence of a fault rupture depends on several factors, including location of the epicenter in relation to the project site, and the characteristics of the earthquake, such as intensity and duration. The hazards associated with fault rupture generally occur in the immediate vicinity of the fault system. The project site is not located in a designated fault zone of the Alquist-Priolo Earthquake Faulting Zoning Map (CGS 1999). Because active faults were not identified on the project site, ground rupture would not be anticipated.

Strong earthquakes generated along a fault system generally create ground shaking, which attenuates (i.e., lessens) with distance from the epicenter. In general, the area affected by ground shaking would depend on the characteristics of the earthquake and location of the epicenter. As described above, no active faults were identified on the project site, nor is the project site located in an Alquist-Priolo Earthquake Fault Zone. However, the project site is located in an area subject to strong ground shaking from earthquakes generated along the active San Andreas, Hayward, and Calaveras fault systems. These fault systems could generate

seismic ground shaking intensities of M X to XI, which could result in structural damage to buildings.

The UBC classifies the project site as being in seismic zone IV; minimum ground acceleration of 0.40g are used for structure designs in the region. Structures built in accordance with these standards should be able to: (1) resist minor earthquakes without damage; (2) resist moderate earthquakes without structural damage but with some non-structural damage; (3) resist major earthquakes without collapse, but with some repairable structural damage as well as non-structural damage; and (4) resist major earthquakes, equal to the strongest experienced in California, without collapse but with major nonstructural and structural damage that may not be repairable (City of Santa Clara 1992). Because the project and the development option would comply with UBC design standards and City of Santa Clara Resolution No. 6976, this would be a less-than-significant impact.

Impact 4.7-2

Soil Erosion Impacts. *The project site would require grading, which could result in the erosion of project site soils. The project includes and would be required to obtain a National Pollutant Discharge Elimination System (NPDES) permit from the State Water Resources Control Board (SWRCB). As part of the permitting process, the developer would be required to implement measures to prevent erosion of project site soils in a manner that is consistent with air and water quality protection measures outlined in the RAW. Therefore, this would be a less-than-significant impact.*

The project would require grading, which could result in the erosion of project site soils. Because the project site is larger than 1 acre, the project applicant would be required by state law to obtain an NPDES permit from the SWRCB. The NPDES permit would require the project applicant to develop and implement a Storm Water Pollution Prevention Plan (SWPPP), which specifies Best Management Practices (BMPs) that would prevent erosion impacts to the project site. Standard BMPs required by the SWRCB and that would be implemented by the project applicant include the use of silt fences and straw bales to prevent runoff from the active grading areas, use of proper grading techniques, shoring and bracing of the construction project site, and covering or stabilizing stockpiles of topsoil and other earth materials. These measures are also consistent with and would help implement air and water quality protection measures outlined in the RAW. For example, watering of site soils would be implemented at a level to wet surface soils and prevent wind erosion but not to a degree that would cause the pooling of water and potential runoff. In the event there is runoff, BMPs would be in place to capture the runoff and prevent it from traveling off-site. Implementation of BMPs would reduce soil erosion impacts to a less-than-significant level.

Impact 4.7-3

Unsuitable Soil Conditions. *Although the project site is located in an area subject to strong ground shaking as a result of earthquakes, the potential for liquefaction and ground failure on the project site is low because of the very low project site relief. Further, the California Division of Mines and Geology (CDMG) Seismic Hazard Zone Report 058 indicates that the susceptibility of project site soils to liquefaction or lateral spreading is low to moderate. This would be a less-than-significant impact.*

Primary factors in determining liquefaction potential are soil type, level and duration of seismic ground motions, and depth to groundwater. Sandy, loose, or unconsolidated soils are most susceptible to liquefaction hazards. Seismically induced ground failure is typically caused by densification of subsurface soils during and immediately following earthquakes. Again, loose, granular soils are most susceptible to densification, resulting in ground failure. Liquefaction is the phenomenon in which saturated granular sediments temporarily lose their shear strength during periods of strong, earthquake-induced ground shaking. The project site is located in the State of California Seismic Hazard Zone for liquefaction (Exhibit 4-8) with groundwater depth of 30 to 40 feet bgs. However, the CDMG Seismic Hazard Zone Report 058 (2002) indicates that the susceptibility of project site soils to liquefaction or lateral spreading is low to moderate. Further, the potential for liquefaction or lateral spreading at the project site is low because of the very low topographic relief. This would be a less-than-significant impact.

4.7.3 MITIGATION MEASURES

No mitigation is necessary for the following less-than-significant impacts.

4.7-1: Seismic Related Impacts.

4.7-2: Soil Erosion Impacts.

4.7-3: Unsuitable Soil Conditions.

4.7.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's earth resources impacts (Impact 4.7-1 through 4.7-3) would be less than significant. No mitigation is required.

4.8 HYDROLOGY AND WATER QUALITY

The purpose of this section is to determine the potential hydrology and water quality impacts that would occur with construction and implementation of the project. A Storm Drain Analysis and Storm Drainage Report were prepared for the project by HMH Engineers in February 2006 (Appendix G) to evaluate available capacity in the city's storm drainage system. A Stormwater Quality Control Plan was prepared for the project by David A. Friedland in August 2004 (Appendix H) that identifies measures to reduce pollutants discharged from onsite stormwater. The results of these reports are summarized in this section.

4.8.1 ENVIRONMENTAL SETTING

The project site is located in the Santa Clara Valley Groundwater Basin, which is separated into two hydrologic groundwater zones: forebay and pressure zones. Geological conditions in the forebay zone allow precipitation, stream flow, and water diverted into percolation ponds to enter and "recharge" the deep aquifers. The pressure zone includes areas of the valley where impervious and generally continuous clay strata overlie groundwater aquifers. The City of Santa Clara lies entirely in the pressure zone. The groundwater aquifers in the pressure zone are the most productive in the valley and the source of most groundwater extraction. The project would be supplied water from the city and would not deplete local groundwater supplies. Further, the site is not a local recharge area and development of the site in a highly urbanized area would not interfere with groundwater recharge in the local area. Therefore, these issues are not addressed further in this Draft EIR. The project site is not located near an open body of water and therefore would not be subject to seiche mudflow or a tsunami.

The nearest body of water is the Guadalupe River located approximately 3 miles north of the project site. The project site is located in the west valley watershed, which drains south to South San Francisco Bay, but site runoff drains to the east toward North Winchester Boulevard. The project site is not located in 100-year floodplain and would not be subject to stream flooding or flooding by a dam because of its distance from the Guadalupe River (City of Santa Clara 1992). Therefore, this issue is not addressed further in this Draft EIR.

Past stormwater generation rates were calculated in the Storm Drain Analysis (Appendix G). Currently, there is no formal onsite storm drainage system. As a result, stormwater overland flows from rooftops and paved areas to unpaved areas of the site where it percolates to groundwater or is conveyed to the city's storm drainage system. The existing topography of the site allows stormwater to flow to two drainage systems; Winchester Boulevard and Forest Avenue. The Winchester Boulevard system flows to the north to Pruneridge and west to an outfall into the San Tomas Aquino Creek box culvert. The Forest Avenue system flows to the west to San Tomas Expressway and into the San Tomas Aquino Creek box culvert (HMH 2006). Some onsite stormwater flows overland to the developed surrounding properties that drain to the municipal storm drainage systems (Friedland 2004).

Stormwater generation rates are usually calculated for specific rain events. City of Santa Clara design criteria for a 10-year design storm was used to calculate runoff volumes as these

volumes are used to design the city's storm drainage system. A 10-year storm event has a 1/10th chance (10% chance) of occurring in any one year. The area where the 6-acre senior housing site would be located currently drains towards Winchester Boulevard. This area is estimated to result in the generation of 1.9 cubic feet per second (cfs) of runoff during a 10-year storm event (HMH 2006). The area where the 11-acre single family site would be located (including 1 acre of park) drains towards Forest Avenue. This area is estimated to currently result in the generation of 12.8 cfs of runoff during a 10-year storm event (HMH 2006).

The City of Santa Clara operates a storm drainage system that conveys stormwater to San Francisco Bay. The City's system is designed to accommodate flows from 10-year storm event.

REGULATORY SETTING

Water quality in California is regulated through the federal Clean Water Act, which is managed by the EPA, with implementation delegated to the State Water Resources Control Board (SWRCB) and a number of Regional Water Quality Control Boards (RWQCB). Water quality at the project site is primarily regulated by the San Francisco Bay RWQCB. The following provides a description of the entities that may have regulatory control over water quality at the project site.

U.S. EPA

The U.S. EPA (Region 9) is responsible for managing the federal Clean Water Act. Generally, the EPA does not get directly involved in project-level water quality protection unless the state does not comply with the Clean Water Act.

Pollution sources that do not have a single point of origin are referred to as nonpoint-source pollutants. In an effort to reduce nonpoint source pollutants into surface waters of the United States, congress amended Section 402 (p) of the Clean Water Act in 1987 to require National Pollutant Discharge Elimination System (NPDES) permits for certain stormwater discharge sources. Regulation of these stormwater discharge sources are delegated to the RWCQB. Projects involving disturbance (i.e., clearing, grading, and excavation) of one or more acres are required to comply with the provisions of the statewide General Construction Activity Storm Water Permit (SWP) that identifies potential sources of pollution and provides best management practices (BMPs) to reduce stormwater-related pollutant discharges into surface waters. BMPs are management or structural practices designed to reduce water and groundwater contamination.

San Francisco Bay Regional Water Quality Control Board

The San Francisco Bay RWQCB is an agency in the California-EPA, under the authority of the SWRCB, and regulates surface water and groundwater quality in the San Francisco Bay. The jurisdiction of the RWQCB is San Francisco, Suisan, and Tomales bays, all streams and rivers that flow into them (beginning at a point just west of Antioch), ocean waters and groundwaters. The RWQCB's primary policy document for the management of water quality is the Water Quality Control Plan for the San Francisco Bay Basin (Basin Plan); last updated June 21, 1995.

SWRCB and RWQCBs enforce state statutes, which are equivalent to or more stringent than the federal statutes. RWQCBs are responsible for establishing water quality standards and objectives that protect the beneficial uses of various waters. In the project study area the San Francisco Bay RWQCB is responsible for protecting surface waters and groundwater from both point sources of pollution (i.e., discharge from a pipe, ditch, or other well-defined source), and nonpoint sources (i.e., diffuse sources with no discernable distinct point of source, often referred to as a runoff or polluted runoff from agriculture, urban areas, mining, construction sites, and other sites).

The San Francisco Bay RWQCB issues permits for activities, including construction activities, that could adversely affect surface water and groundwater in the vicinity of the project site. The NPDES stormwater permitting program, under Section 402(p) of the federal Clean Water Act (CWA), is managed by the RWQCB for the U.S. EPA.

Santa Clara Valley Urban Runoff Pollution Prevention Program

The Santa Clara Valley Urban Runoff Pollution Prevention Program (Program) is a multi-jurisdictional cooperative effort among Santa Clara County, the Santa Clara Valley Water District, and 13 north county cities (including the City of Santa Clara), all working to improve the water quality of south San Francisco Bay and the streams of Santa Clara County, by reducing nonpoint source pollution in storm water runoff and other surface flows. The Program was established in response to two water quality regulations affecting the San Francisco Bay: the federal Clean Water Act and the San Francisco Bay Basin Water Quality Control Plan (RWQCB Basin Plan).

Program participants, referred to as co-permittees, share a common permit to discharge stormwater to south San Francisco Bay. To reduce pollution in urban runoff to the "maximum" extent practicable, the Program incorporates regulatory, monitoring and outreach measures aimed at improving the water quality of south San Francisco Bay and the streams of the Santa Clara Valley.

The San Francisco RWQCB issued the Program its first NPDES permit in 1990, and reissued the permit in 1995 and 2001. As part of the NPDES permit requirements, the Program produced (and updates) an Urban Runoff Management Plan and submits annual work plans and reports to the Regional Board.

City of Santa Clara

The City of Santa Clara maintains the stormwater drainage system in the City. This system is designed to accommodate flows associated with 10-year storm events and existing land uses. The City reviews stormwater management for new development projects on a case-by-case basis to ensure an effective and efficient solution and has integrated Program requirements into its review and approval procedures (Riley, pers. comm., 2003).

4.8.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in significant hydrology and water quality impacts if it would:

- violate any water quality standards or waste discharge requirements or otherwise substantially degrade water quality;
- substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner which would result in substantial erosion or siltation onsite or offsite or substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or offsite; and/or
- create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff.

IMPACT ANALYSIS

Impact 4.8-1

Water Quality Impacts. *The project developers would obtain all necessary permits from the RWQCB to prevent water quality degradation. The project would not create or contribute to soil or groundwater contamination, and the project developers would implement measures as part of their NPDES requirements to reduce pollutant concentrations in project site runoff to the maximum extent practical and in a manner that is consistent with air and water quality protection measures outlined in the RAW. Therefore, water quality impacts would be less than significant.*

The project would result in surface disturbance through ground scraping, grading, and compaction associated with conventional development activities. Existing vegetation would be removed, increasing the potential for erosion. Although the project site is relatively flat and the potential for soil erosion is considered low, peak stormwater runoff could result in short-term sheet erosion in areas of exposed or stockpiled soils. Further, the compaction of soils by heavy equipment may reduce the infiltration capacity of soils and increase the potential for runoff and erosion. If uncontrolled, these soil materials could result in engineering problems, including the blockage of storm drainage channels and downstream sedimentation. The City of Santa Clara is a co-permittee of the Program NPDES permit. The NPDES permit requires all projects that would disturb more than 1 acre to prepare and implement a Storm Water Pollution Prevention Plan (SWPPP) specifying BMPs to minimize discharge of sediment and pollutants to surface waters (see Impact 4.7-2). BMPs for the project could include, but are not limited to protection of cut slopes and drainage ways from direct exposure to water runoff with native plantings immediately following grading activities; placement of erosion control matting on exposed slopes; and lining of drainage facilities to prevent erosion of site soils immediately following grading activities. Further, these BMPs would be consistent with and would help implement air and water quality protection measures outlined in the RAW. For example, watering of site soils would be implemented at a level to wet surface soils and prevent wind

erosion but not to a degree that would cause the pooling of water and potential runoff. In the event there is runoff, BMPs would be in place to capture the runoff and prevent it from traveling off-site.

In 2001, the RQWCB re-issued waste discharge requirements (WDRs) under the NPDES program for the discharge of stormwater runoff (NPDES Permit No. CAS0299718, RWQCB Order No. 01-024). The WDRs require the preparation of a stormwater management plan (SWP), which describes a framework for management of stormwater discharges. This plan also identifies measures that would comply with the requirements of the Urban Runoff Management, Comprehensive Control Program Section of the Basin Plan. The city's WDRs include Provision C.3, which calls for increased performance standards for post-construction impacts for new and redevelopment projects. The project would be required to obtain a General Permit for Construction Activities (i.e., NPDES) from the RQWCB. The project developers have also developed a stormwater quality control plan for the project site, which would reduce pollutants discharged from the site over the life of the project and would comply with Provision C.3 of the city's WDRs (Friedland 2004). This plan (Appendix H) identifies measures that could be implemented at the site to control the quality of the stormwater that is discharged in compliance with the provisions of the City's NPDES permit (Provision C.3).

The project would be considered a Group 1 Project under Section C of Provision C.3 and would be required to design and implement stormwater treatment BMPs to reduce stormwater pollutants to the maximum extent possible. Measures appropriate for the project site could include the construction of:

- grass/vegetated swales: earthen channels that would convey stormwater and would remove pollutants through filtering by vegetation and biological and chemical processes in the vegetation and soil;

- wet ponds: permanent pools of water that detain stormwater, trap sediment loads, and remove pollutants through use of treatment wetlands;

- dry ponds: extended detention ponds that store stormwater for short periods of time (i.e., few hours to few days) and then slowly discharge the stormwater to the municipal drainage system. Pollutants would be removed similar to grass/vegetated swales;

- infiltration: dry wells or trenches constructed to allow roof runoff to infiltrate onsite soils;

- mechanical devices: sand (or other media) filters that treat runoff, oil/water separators that remove petroleum compounds, and other proprietary devices to remove pollutants from the stormwater.

Specific measures that could be implemented at the site are described in greater detail in the Stormwater Quality Control Plan (Friedland 2004) in Appendix H.

Because the project developers would implement measures to prevent on- and off-site erosion and the degradation of stormwater quality over the life of the project, the project's erosion and water quality impacts would be less than significant.

A Phase I Environmental Site Assessment (Phase I) and a Phase II Site Characterization Report (Phase II) were prepared for the project by Environ in November 2002 and May 2003. These reports were peer reviewed by Hallenbeck/Allwest in July 2003. The reports indicated that soil contamination resulting from past agricultural operations is present in isolated areas on the project site. DGS has entered into a VCA with the DTSC and has prepared a draft RAW to remove contaminated soils at the site. Based on the results of the Phase I and Phase II, there is no evidence that contamination has reached groundwater beneath the site. Further, because contaminated soils would be removed from the site before project construction, it is unlikely that past site operations could contribute to water quality impacts at the site. Therefore this would be a less-than-significant impact.

Residential land uses typically result in generation of atmospheric pollution, tire-wear residues, petroleum products, and oil and grease, which would be transferred to roadways in the community. Further, it is likely that fertilizers and pesticides would be used by residents to maintain landscaped areas. These constituents could enter the City's storm drainage system and could adversely affect the water quality of south San Francisco Bay (discharge point). The proposed project would be subject to the Program's existing NPDES General Permit, which requires that discharges of pollutants from areas of new development be reduced to the maximum extent practicable. Compliance with these standards requires that control measures be incorporated into the design of new development to reduce pollution discharges in site runoff over the life of the project. Because the project would be required to implement measures to reduce pollution discharges in site runoff, this would be a less-than-significant water quality impact.

Impact 4.8-2

Storm Drainage Impacts. *Implementation of the project would increase the amount of impervious surface area, which could generate stormwater runoff volumes that exceed the capacity of the City's existing storm drainage system. This would be a potentially significant impact.*

The project site is primarily developed with abandoned hay fields, orchards, and associated agricultural buildings (i.e., greenhouses and storage buildings). A small portion (approximately 0.5 acre) of the site near the northeast corner is paved, while the remainder (16.5 acres) of the site is unpaved. Development of the project would pave and cover a majority of the site with roadways, sidewalks, building footprints, and landscaping. Under the project, approximately 58% (i.e., 6.34 acres) of the 10-acre single-family development would be impervious, and 46% (i.e., 2.75 acres) of the 6-acre senior housing development would be impervious. In total, approximately 53% of the project site would be impervious surfaces (Friedland 2004).

The project would increase the volume of stormwater that is generated on the site compared to existing conditions. Stormwater runoff rates from proposed land uses are estimated to

increase to 22.2 cfs during a 10-year storm event (HMH 2006). The developers propose to construct a stormwater drainage system (i.e., drains and pipes) that would connect to the City's existing storm drainage system, which was designed to accommodate stormwater flows during a 10-year storm event from existing land uses (i.e., total of 14.7 cfs). Although the storm drainage system within Forest Avenue has sufficient capacity to accommodate increased flows, the storm drainage system within Winchester Boulevard would not have capacity to absorb increased flows from new development (HMH 2006). Further, because of capacity constraints in the City's overall system, by the time final maps are submitted to the City for approval, capacity in the Forest Avenue system may not be available. Because the project would increase the 10-year stormwater flows above existing conditions, the City's Winchester Boulevard system does not have capacity to accommodate flows from new development, and the capacity in the Forest Avenue system could change by the time maps for the project are submitted, the project could adversely affect the City's storm drainage system resulting in on- or offsite flooding (HMH 2006). This would be a potentially significant impact.

4.8.3 MITIGATION MEASURES

No mitigation is necessary for the following less-than-significant impacts.

4.8-1: Water Quality Impacts.

Mitigation is recommended for the following potentially significant impact.

4.8-2: Storm Drainage Impacts. The developers shall prepare and implement a Comprehensive Stormwater Drainage Plan for the project, which shall be reviewed and approved by the City of Santa Clara Public Works and Planning departments. This plan shall identify stormwater drainage facilities that would be constructed to reduce the peak flow of stormwater generated during a 10-year storm event below existing generation rates (i.e., 1.9 cfs for any flows that discharge to the Winchester Boulevard system). The project applicant shall submit its storm drain plans to the City for approval. These plans shall demonstrate that no more than 1.9 cfs of stormwater would be discharged to Winchester Boulevard.

If it is determined during final design of the project that sufficient capacity in the Forest Avenue system would not be available to serve the project's currently proposed discharge volumes (i.e., 22.2 cfs), the project applicant, as part of its Comprehensive Stormwater Drainage Plan, shall ensure that project-related stormwater discharges do not exceed the capacity available (as determined by the City) within the Forest Avenue system. Potential options for ensuring the capacity of the Forest Avenue system is not exceeded include the replacement of existing stormwater pipeline or construction of a new pipeline parallel to the existing stormwater line from Forest Avenue to the San Tomas Aquino Creek box culvert. This option would result in construction within existing road right-of-way or urban developed areas (e.g., sidewalks, lawn). This option would not result in any new significant impacts that have not been previously identified throughout this EIR. An alternate option would be to upsize existing stormwater facilities within the project site to provide capacity to detain

stormwater on-site for longer periods of time to allow the timed discharge of stormwater to the Forest Avenue system so not to exceed its capacity. This option would occur within the project site footprint and would not result in any new significant environment impacts that have not been identified throughout this EIR.

4.8.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

After implementation of the above mitigation measures, the project's stormwater impacts (Impact 4.8-2) would be less than significant because project developers would construct the necessary storm drainage facilities onsite to reduce stormwater discharge rates to the City's stormwater system below existing conditions, and/or consistent with available capacity in the system.

4.9 PUBLIC SERVICES AND UTILITIES

The purpose of this analysis is to determine potential impacts of construction and operation of the project on existing public services and utilities. The project includes the construction of a 1-acre park facility and open space areas, which exceed the typical recreation amenities required by the City of Santa Clara. Therefore, this issue is not addressed further in the Draft EIR (refer to Section 1.3.2).

4.9.1 ENVIRONMENTAL SETTING

FIRE PROTECTION

The project area is served by the City of Santa Clara Fire Department (SCFD), which provides general fire, hazardous material, and emergency services in the City. The SCFD operates 10 fire stations and employs a staff of 176 paid fire service personnel who, along with 65 volunteers, respond to over 7,000 emergency calls annually (Fire Department Fact Sheet 2005). The current Insurance Service Office (ISO) rating for the SCFD is 2. The ISO rates community fire service on a scale from 1 to 10. An ISO rating of 1 represents exemplary fire protection, and an ISO rating of 10 indicates that the area's fire-suppression program does not meet ISO minimum criteria.

Fire Station #4, located at 2323 Pruneridge Avenue, would be the first unit to respond to an emergency at the project site. This facility is less than 1 mile from the project site and operates one engine from the fire station. Fire Station #1, located at 777 Benton Street, would be the second unit to respond to the site if Fire Station #4 could not respond or needed assistance. This facility is located approximately 2 miles from the project site. It is SCFD's goal to respond to emergencies in its service area within 3 minutes.

The SCFD participates in a mutual aid fire response program with the cities of Milpitas and San Jose. In the event of an emergency, which SCFD could not respond or needed assistance, fire and emergency personnel from the cities of Milpitas and San Jose would respond.

POLICE SERVICES

Police services are provided by the City of Santa Clara Police Department (SCPD). The SCPD provides a complete range of law enforcement services (i.e., drug enforcement, citizen response, patrol) and employs 147 sworn officers. The City has a police station located at 601 El Camino Real, approximately 2.5 miles from the project site. The Northside substation is located at 3992 Rivermark Parkway, approximately 6 miles from the project site. The SCPD provides approximately 1.48 officers per 1,000 residents (Police Department Fact Sheet 2005). It is SCPD's goal to respond to emergencies within 3 minutes (Scaletta pers. comm. 2006).

SCHOOLS

The project site is located in the Campbell Union School District (CUSD) for K–8 and the Campbell Union High School District (CUHSD) for grades 9 through 12. The CUSD operates

three middle schools and nine elementary schools. The nearest elementary school is Lynhaven Elementary School located at 881 South Cypress in the City of San Jose, approximately 1.6 miles from the project site. The nearest middle school is Monroe Middle School located at 1055 South Monroe in the City of San Jose approximately 1.6 miles from the project site. Enrollment in the CUSD has remained relatively constant at approximately 7,600 students.

The CUHSD operates five comprehensive high schools. The nearest high school is Del Mar High School located at 1224 Del Mar Avenue in the City of San Jose, approximately 2.7 miles from the site. Enrollment in the CUHSD has remained relatively constant at approximately 6,900 students.

New development that would increase the number of students entering CUSD or CUHSD are assessed school impact fees to offset costs associated with providing additional resources (e.g., teachers, supplies, facilities) for incoming students. The impact fee for single-family homes is $1.01 per square foot (Selzer, pers. comm., 2006). Senior housing developments are not assessed a school impact fee as they do not typically generate students.

WATER SUPPLY

Water supply and service to the project site would continue to be provided by the Santa Clara Valley Water District (SCVWD) and the City of Santa Clara Water and Sewer Utilities (CSC). The CSC serves homes, businesses, and industry in the City, meeting water demands of approximately 102,000 residents. The CSC relies on groundwater resources from the underlying aquifer and surface water supplies from the SCVWD and the San Francisco Hetch-Hetchy System. Approximately 30% of the City's water is from imported sources (e.g., Sacramento-San Joaquin Delta and Tuolumne River watershed in the Sierra Nevada), and approximately 70% is from the underlying groundwater aquifer; however, some of the groundwater is recharged from imported water. While the CSC has eight local reservoirs that collect local storm runoff for groundwater recharge purposes, water imported from the State Water Project and the U.S. Bureau of Reclamation Central Valley Project is also used to recharge the underground water basin (West Yost and Associates 2003). The CSC also uses recycled water for non-potable landscape irrigation (e.g., roadway medians, parks, public landscaping).

SCVWD operates a water treatment plant located in the town of Los Gatos. The Rinconada Water Treatment Plant has the capacity to treat up to 80 million gallons per day (mgd); however, it is currently treating only 24 mgd. CSC operates water storage facilities with 27.3 million gallons of water storage capacity (Water and Sewer Utilities Fact Sheet 2005). CSC operates and maintains two water mains in the vicinity of the project site: a 12-inch main in Winchester Boulevard and an 8-inch main in Henry Avenue. CSC requires water demand to be calculated and submitted by the developer's engineer.

WASTEWATER

The site is currently served by the CSC. Services provided by CSC include construction, operation, and maintenance of the sanitary sewer system. The CSC operates an 8-inch sanitary sewer line in Winchester Boulevard.

Wastewater collected in the City is conveyed to the San Jose/Santa Clara Water Pollution Control Plant (WPCP). The WPCP, which is located in North San Jose, is jointly owned by the cities of Santa Clara and San Jose and provides wastewater treatment service to 8 tributary agencies. The WPCP is an advanced, tertiary treatment facility with capacity to treat up to 167 million gallons per day (mgd) average dry weather flow. The average dry weather influent flow for WPCP during the 2005 calendar year was 118 mgd. After recycling some wastewater, the WPCP discharges approximately 100 mgd of average dry weather flow to San Francisco Bay. The WPCP is permitted to discharge up to 120 mgd of treated wastewater to south San Francisco Bay. WPCP staff indicated that the WPCP has adequate discharge capacity to serve existing and proposed development in the City through at least 2010 (LeBaudour, pers. comm. 2006).

STORM DRAINAGE

The City of Santa Clara maintains municipal storm drainage facilities in the project vicinity. The site is partially served by storm drainage systems located in Winchester Boulevard and Forest Avenue. The City's storm drainage system can accommodate stormwater flows from existing land uses for a 10-year storm event (see Section 4.8, Hydrology and Water Quality). Currently, runoff from 5.79 acres of the site drains towards Winchester Boulevard or percolates to groundwater. The remaining 10.77 acres drain toward the east in to an existing trunk line at Forest Avenue (HMH 2006).

SOLID WASTE DISPOSAL

Solid waste pick-up and disposal and recycling collection and processing in the project vicinity is provided by Mission Trail Waste Systems. Municipal waste is transported to the Newby Island Landfill in Milpitas, approximately 11 miles north of the site. According to the General Plan, the City has secured landfill disposal capacity for all of its solid waste disposal needs until the year 2019 through an agreement with the owners of the landfill (City of Santa Clara 1992).

4.9.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

Implementation of the proposed development would result in a significant impact if it:

- caused a substantial adverse physical impact associated with the provision of new or physically altered governmental facilities or utilities, the construction of which could cause significant environmental impacts, to maintain acceptable service ratios, response times or other performance objectives for police and fire services;

- resulted in insufficient water supplies or required new or expanded entitlements to water supply resources that are not currently planned;

- required construction of new water or wastewater treatment facilities (or the expansion of existing facilities) which could cause significant environmental effects or failure to meet the wastewater treatment requirements of the applicable Regional Water Quality Control Board;

- required construction of new storm water drainage facilities (or the expansion of existing facilities) that could cause significant environmental effects; or

- resulted in development that failed to comply with statutes and regulations related to solid waste or that could not be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs;

IMPACT ANALYSIS

Impact 4.9-1

Impacts to Public Services. *The project would not substantially affect the ability of local police and fire departments to respond to emergencies in the project area because of its close proximity to existing police and fire stations and limited increase in traffic volumes. Although the development would generate new students, the nearby elementary and high schools have available capacity to accommodate new students, and the development would be assessed a $1.01 per square foot impact fee for single-family dwellings. No new police, fire, or school facilities would be required. This would be a less-than-significant impact.*

The project would result in the construction of 110 single-family residences and 165 senior housing units. These proposed land uses would increase demand for police, fire, and emergency response services. Emergency access would be provided by two driveways along Winchester Boulevard and an "emergency access only" driveway along Forest Avenue. All driveways would conform to the City's and SCFD's standards for emergency vehicle access. The SCFD and SCPD have indicated that emergency response times are not likely to increase as a result of the proposed project, both short-term during construction operations, and long-term, because there would be a minimal increase in traffic volumes in the project area (refer to Section 4.10, Transportation). In addition, the SCFD and SCPD both indicated that the development would not substantially affect their ability to serve the project area, and no additional personnel or equipment would be needed (Scaletta, pers. comm., 2006; Sawyer, pers. comm., 2006). Therefore, this would be a less-than-significant police and fire impact.

The project site is located in the CUSD and CUHSD. Enrollment at nearby schools was 486 students at Lynhaven Elementary School, 929 students at Monroe Middle School, and 1,286 students at Del Mar High School. All schools have available capacity to accept new students. Based on student generation rates of 0.14 student per dwelling unit (s/du) for elementary and middle school and 0.17 s/du for high school, the project (110 single-family units) is expected to generate approximately 16 elementary and middle school students and approximately 19 high school students. Because nearby schools have available capacity to accept new students, the

proposed project would not substantially increase the number of students entering CUSD and CUHSD, and the development would be assessed a $1.01 per square foot impact fee per single-family dwelling, this would be a less-than-significant school impact (Selzer, pers. comm., 2006).

Impact 4.9-2

Water Supply Impacts. *The Santa Clara Water and Sewer Utility (CSC) has indicated that water supplies are available to serve the proposed development and no new water supplies or facilities would be required. This would be a less-than-significant impact.*

CSC indicated that they have available water supplies to serve the new development and that no new major water main and water supply facilities would need to be constructed (Fitch, pers. comm., 2006). Because water supplies are available to serve the development, and the project would not result in the need for a new major water main and construction of new or expanded water supply facilities, this would be a less-than-significant impact.

Impact 4.9-3

Wastewater Service Impacts. *The Santa Clara Water and Sewer Utility (CSC) and San Jose/Santa Clara Water Pollution Control Plant (WPCP) have capacity available to convey and treat project-related wastewater. No new wastewater facilities would be required. This would be a less-than-significant impact.*

The project would generate wastewater that would be collected by the municipal sewer system and delivered to the WPCP for treatment and discharge to south San Francisco Bay. The project would be served by a 8-inch sewer main in Winchester Boulevard. Based on the results of sanitary sewer monitoring, CSC would be able to serve the development (refer to Appendix I). Because there is adequate capacity in the existing sewer system and WPCP to convey and treat project-related wastewater, this would be a less-than-significant impact.

Impact 4.9-4

Storm Drainage System Impacts. *Project-related stormwater volumes could exceed the capacity of the City's Winchester Boulevard storm drainage system. Therefore, this would be a potentially significant impact.*

The project would increase the volume of stormwater generated on the project site as a majority of the site would be paved, covered with buildings, or landscaped. The project is estimated to generate 22.2 cfs of stormwater during a 10-year storm event. The City's storm drainage system is designed to accommodate stormwater flows from existing land uses for a 10-year storm event (i.e., 14.7 cfs). The project would increase the volume of stormwater generated on the site. The City's Winchester Boulevard stormwater system does not have capacity to absorb increased flows from new development (refer to Impact 4.8-2). Therefore, the project could adversely affect the City's storm drainage system. This would be a potentially significant impact.

Impact 4.9-5

Solid Waste Disposal Impacts. *Sufficient landfill capacity is available to serve the project. This would be a less-than-significant impact.*

The Newby Island Landfill has approximately 52 acres available for disposal of municipal waste. This acreage is sufficient to accommodate the City's municipal waste disposal needs

until year 2019. Continued implementation of curbside recycling programs could lengthen the available capacity of the landfill. The project would not generate a substantial volume of solid waste. The Newby Island Landfill has capacity available to serve the project (City of Santa Clara 1992). Therefore, this would be a less-than-significant impact.

4.9.3 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

4.9-1: Impacts to Public Services.

4.9-2: Water Supply Impacts.

4.9-3: Wastewater Service Impacts.

4.9-5: Solid Waste Disposal Impacts.

Mitigation is recommended for the following potentially significant impact.

4.9-4: Storm Drainage System Impacts. Implement Mitigation Measure 4.8-2.

4.9.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's public service and utility impacts (Impact 4.9-1 through 4.9-3 and 4.9-5) are less than significant. With implementation of storm drainage mitigation (Impact 4.9-4), the projects storm drainage impact would be reduced to a less-than-significant level, because project developers would ensure that stormwater discharged to the Winchester Boulevard system does not exceed 1.9 cfs. Further, the project's proposed drainage plans would need to be approved by the City prior to implementation. Therefore, this impact would b reduced to a less-than-significant level.

4.10 TRANSPORTATION AND CIRCULATION

The following section describes the transportation and circulation impacts associated with implementation of the project. The results of this analysis are based on a Transportation Impact Analysis (October 2005) and Neighborhood Impact Analysis (September 2005) prepared by Fehr & Peers, which are included in Appendix J and K respectively. This analysis has been prepared consistent with the requirements of Santa Clara Valley Transportation Authority (VTA). The project site is not located near an airport and would not change existing air traffic patterns. Therefore, this issue is not addressed further in this Draft EIR.

4.10.1 ENVIRONMENTAL SETTING

SITE DESCRIPTION

The project site is located in the City of Santa Clara, on North Winchester Boulevard (Exhibit 4-9). Regional access to the project site is provided by Interstate 280 (I-280), Interstate 880 (I-880), State Route 17 (SR 17), and San Tomas Expressway. Primary local access to the site is provided by Winchester Boulevard, Stevens Creek Boulevard, Pruneridge Avenue, and Forest Avenue. Detailed descriptions of the key roadway facilities are presented below.

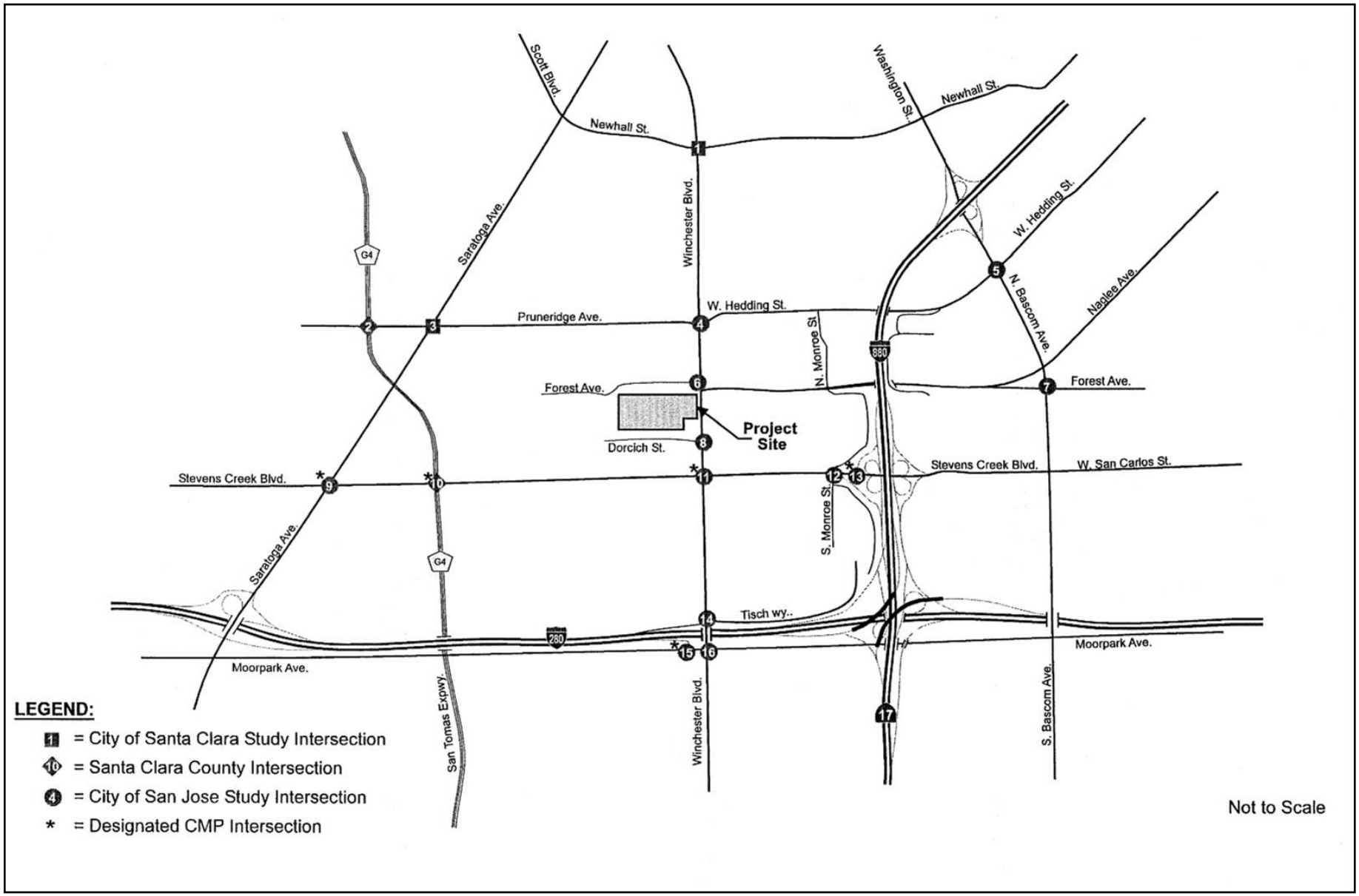
Freeways and Highways

I-280 is generally a north/south, eight-lane freeway that connects San Francisco with I-680 in San Jose. In the project area, it is oriented in an east/west direction. Between I-880 and the San Mateo County line, this freeway has three mixed-flow lanes and one high-occupancy vehicle (HOV) lane in each direction. Between I-880 and I-680, there are no HOV lanes and the cross section varies from eight to ten lanes. Access to and from the project site is provided via the I-280 ramps at Winchester Boulevard and Moorpark Avenue and via Stevens Creek Boulevard and the I-880/I-280 interchange.

I-880 is a north-south, four- to eight-lane freeway. This freeway extends from San Jose to Oakland. In the project area, I-880 has six lanes (three in each direction). Access to the site is provided by Bascom Avenue and Stevens Creek Boulevard interchanges.

SR 17 is a four-to eight lane highway that runs in a north-south direction from San Jose to Santa Cruz. State Route 17, between I-280 and Hamilton Avenue, is a freeway with four mixed-flow lanes in each direction.

San Tomas Expressway is a six-lane, limited access roadway that extends south from US 101 through Santa Clara and San Jose to SR 17. In the study area, one lane in the peak commute direction (northbound in the morning and southbound in the evening) is restricted to high occupancy vehicles (including carpools, buses, and motorcycles) during commute periods. Major intersections on San Tomas Expressway in the study area are signalized.



Source: Fehr & Peers 06/04

Site Location

EXHIBIT 4-9

Santa Clara Gardens Development Project Draft EIR

G 3T008.01 06/04

NORTH EDAW

Collectors and Local Roadways

Winchester Boulevard is a four- to six-lane north/south arterial street that extends from Santa Clara south to Los Gatos. Along the project frontage, Winchester Boulevard has four travel lanes (two in each direction) plus a center lane for left turns. Direct access to the project site is provided via one driveway on Winchester Boulevard at the northeastern corner of the project site.

Stevens Creek Boulevard is a four- to six-lane east/west arterial located south of the project site. It extends eastward from Cupertino, where its name changes to West San Carlos Street at the intersection with Bascom Avenue, and continues east through downtown San Jose.

Forest Avenue is a two- and four-lane east/west roadway located just north of the project site. Forest Avenue is a four-lane east/west roadway east of the project site. Forest Avenue extends east from Parkway Park on San Tomas Expressway to Bascom Avenue in San Jose, where its name changes to Naglee Avenue. Forest Avenue provides rear access to Valley Fair Mall.

Pruneridge Avenue is a four-lane, east/west street located north of the project site. It extends east from Wolfe Road in Cupertino, where its name changes to Hedding Street at the intersection with Winchester Boulevard, and continues east to in San Jose.

Parking

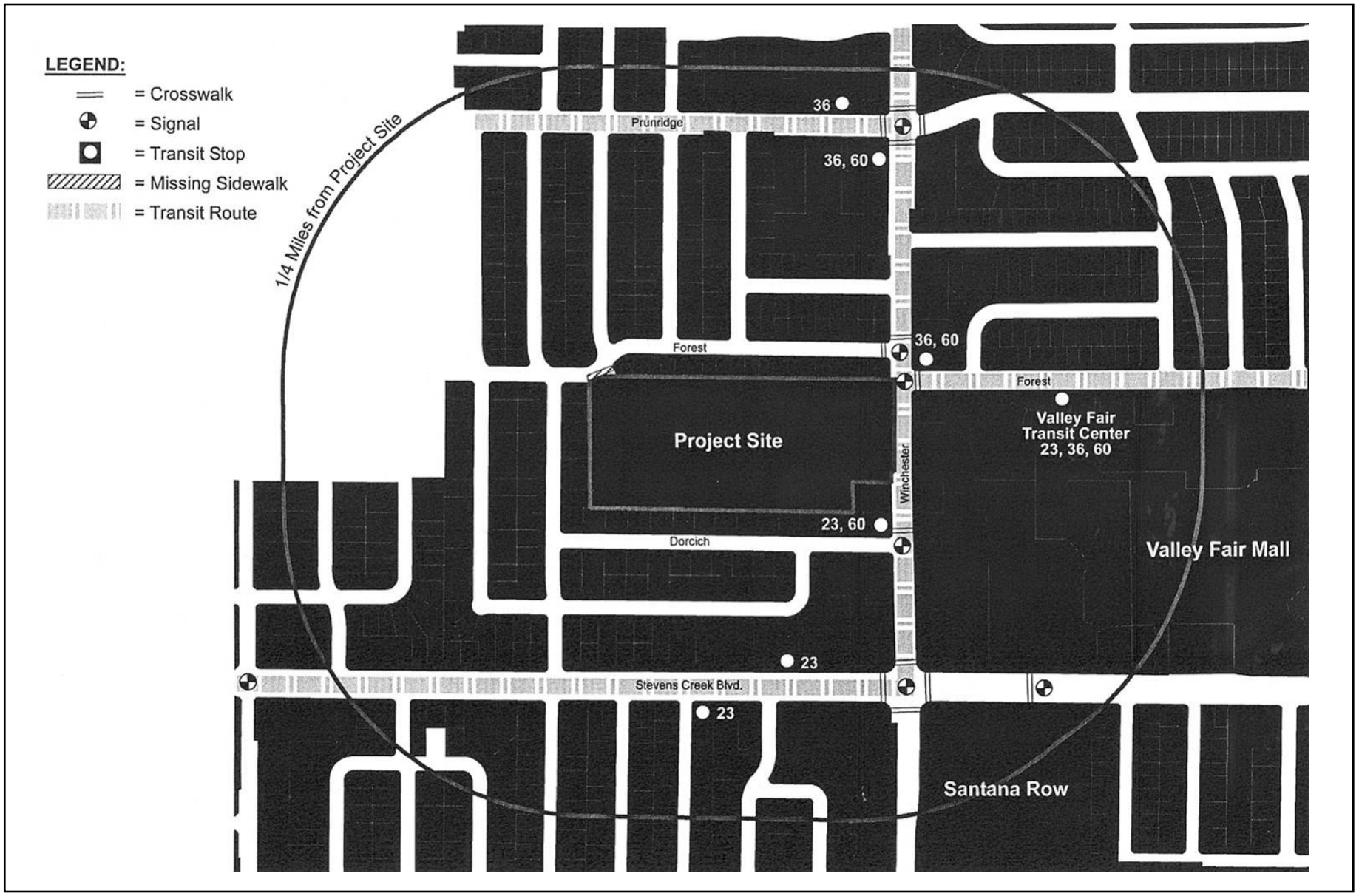
Approximately 20 onsite parking spaces are located near the entrance to the project site adjacent to the office/laboratory building. On-street parking is not available along North Winchester Boulevard. The parking spaces would be demolished before project construction.

Public Transportation

The VTA operates fixed route, commuter, and paratransit bus service and light rail transit service (LRT) in Santa Clara County. The existing transit facilities in the vicinity of the site are show in Exhibit 4-10. Three fixed routes operate within ¼ mile of the project site: routes 23, 36, and 60. Detailed service descriptions of these routes are provided below. The closest bus stop is located on Winchester Boulevard near the Office of Veteran's Affairs building. The Valley Fair Transit Center is located across Winchester Boulevard behind the Nordstrom's department store at Valley Fair Mall.

Route 23 provides daily bus service between downtown San Jose and the San Antonio Shopping Center in Mountain View. Near the project site, Route 23 operates on Stevens Creek Boulevard, Winchester Boulevard, and Forest Avenue. Service is provided between 5 a.m. and 1 a.m. on weekdays on 15- to 30-minute headways. Weekend service is provided between 6 a.m. and 1 a.m. on 15- to 30-minute headways. Route 23 connects with light rail service in downtown San Jose.

Route 36 provides fixed-route service on Pruneridge Avenue, Winchester Boulevard, and Forest Avenue. The route operates between Vallco Fashion Park in Cupertino and east San



Source: Fehr & Peers 06/04

Transit and Pedestrian Facilities

EXHIBIT 4-10

Jose. Service is provided between 6 a.m. and 7 p.m. on weekdays on 30- to 60-minute headways. Weekend service is provided between 8 a.m. and 7:30 a.m. on 30- to 60-minute headways. Route 36 connects with light rail service at the San Jose Civic Center.

Route 60 provides daily fixed-route service between the Old Ironsides Light-duty Rail Transit (LRT) Station and Great America Amusement Park in Santa Clara and the Civic Center in Los Gatos. In the project vicinity, this route operates on Winchester Boulevard and Forest Avenue. Service is provided between 5:30 a.m. and 11 p.m. on weekdays on 15- to 30-minute headways. Weekend service is provided between 6:30 a.m. and 9:30 p.m. on 30- to 60-minute headways. Route 60 connects with Caltrain and light rail service at the Santa Clara Caltrain Station and the Old Ironsides LRT Station.

Pedestrian and Bicycle Facilities

Pedestrian facilities include sidewalks, crosswalks, and pedestrian signals. In the project vicinity, sidewalks are located on the both sides of Winchester Boulevard, Forest Avenue, and neighborhood streets (Exhibit 4-10). Sidewalks in the project vicinity are in good condition and meet ADA standards. Some sidewalks lead to the northwest corner of the project site; there is a short segment adjacent to the site where a sidewalk is currently not provided. Crosswalks, wheelchair ramps, and pedestrian signals are provided at the signalized intersections near the site.

Pedestrian access from the northern portion of the project site to the Valley Fair Transit Center (across Winchester Boulevard) is circuitous because of the location of existing pedestrian facilities (northern leg of Forest Avenue/Winchester Boulevard intersection). Pedestrians have to walk to the northern Forest Avenue/Winchester Boulevard intersection (the Forest Avenue/Winchester Boulevard intersection is offset by about 80 feet) and cross north using Forest Avenue and then east across Winchester Boulevard using the marked crosswalks and the pedestrian signals, south along the east side of Winchester Boulevard and then east on Forest Avenue to the Transit Center. A second crosswalk is located at Dorcich Street and Winchester Boulevard immediately south of the project site. These paths are illustrated on Exhibit 4-10.

Bicycle facilities include bike paths (Class I), lanes (Class II), and routes (Class III). Bike paths are paved trails that are separated from roadways. Bike lanes are lanes on roadways designated for bicycle use by striping, pavement legends, and signs. Bike routes are roadways designated with signs for bicycle use only. In the project area, the City of Santa Clara maintains undesignated bicycle facilities along Stevens Creek Boulevard, Winchester Boulevard, and Forest Avenue. These bikeways are not marked with striping or signs and assume the shared use of the roadways with motor vehicles. Stevens Creek Boulevard and Winchester Boulevard are rated for cyclists to use with 'extreme caution' and Forest Avenue is rated as cyclists 'alert'. No designated bicycle facilities are provided within ¼ mile of the project site.

REGULATORY SETTING

County of Santa Clara Roads and Airports Department

The County of Santa Clara Roads and Airports Department is responsible for the operation and maintenance of the expressways and roads in its jurisdiction.

City of Santa Clara General Plan

The goal of the Transportation Element of the City's General Plan, is to provide a safe and convenient integrated transportation system that is efficient and cost effective. The Transportation Element provides policies and programs for roadways, highways, transportation demand management, bus and rail systems, sidewalks, bikeways, and trails.

Impacts at non-Congestion Management Program (CMP) (see description below) signalized intersections occur when the addition of project traffic causes:

- intersection operations to change from an acceptable level (LOS D or better) under background conditions to an unacceptable level (LOS E or F), or
- exacerbation of unacceptable operations (LOS E or F) by increasing the critical delay by four or more seconds and increasing the volume-to-capacity (V/C) ratio by 0.01 or more, or
- an increase in the V/C ratio by 0.01 or more when the change in critical delay is negative at an intersection projected to operate unacceptably under background and project conditions.

City of San Jose 2020 General Plan

The San Jose 2020 General Plan (as amended through April 15, 2003) is the City's official policy regarding its future character and quality of development. City of San Jose transportation goals aim to provide a safe, efficient, and environmentally sensitive transportation system. Transportation policies have been developed for thoroughfares, impacts on local neighborhoods, transit and pedestrian facilities, transportation systems management/transportation demand management, truck facilities, parking, rail, aviation, and bicycling (San Jose 2003).

Significant traffic impacts at signalized intersections located in the City of San Jose (CMP and local intersections) would occur when the addition of project traffic causes:

- operations to deteriorate from LOS D or better under background conditions to LOS E or F under project conditions, or
- exacerbation of unacceptable operations (LOS E or F) by increasing the critical delay by 4 seconds or more and increasing the volume-to-capacity (V/C) ratio by 0.01 or more, or
- an increase in the V/C ratio by 0.01 or more when the change in critical delay is negative at an intersection projected to operate unacceptably under background and project conditions.

Santa Clara County Congestion Management Program

Proposition 111 and 116, passed by voters in June 1990, triggered state legislation requiring urban counties to designate a countywide public agency, known as a Congestion Management Agency (CMA), to create, manage, and update a countywide Congestion Management Plan (CMP). The purpose of a CMP is: (1) to establish level of service standards for designated freeways, state highways, and local arterials; and (2) to maintain or achieve those standards by increasing capacity of designated roads and/or managing travel demand. Incentives for incorporated cities and towns to take part in the CMP include the receipt of additional Proposition 111 gas tax revenue, Proposition 116 bond funds, and State Transportation system management funds, as well as eligibility for state and federal funds under the Regional Transportation Improvement Program (RTIP), as managed by the Metropolitan Transportation Committee (MTC). If a local government fails to comply with the CMP, the CMA may direct the state to withhold funds and declare local projects ineligible for state or federal funding.

For CMP intersections, VTA determined that significant traffic impacts would occur when the addition of project traffic causes:

- operations to deteriorate from LOS E or better under Background Conditions to LOS F under Project Conditions, or
- exacerbation of unacceptable operations (LOS F) by increasing the critical delay by four seconds or more and increasing the volume-to-capacity (V/C) ratio by 0.01 or more, or
- an increase in the V/C ratio by 0.01 or more when the change in critical delay is negative at an intersection projected to operate unacceptably under Background and Project Conditions.

City of Santa Clara's Zoning Ordinance

The City of Santa Clara's Zoning Ordinance requires a parking supply of two garage spaces for every single-family dwelling. The City's Zoning Ordinance does not have a separate parking requirement for senior housing development. In approving prior senior housing projects, the City has always granted a parking reduction. Further, density bonus standards for affordable housing development in the City's zoning ordinances would allow exceptions to parking requirements.

Levels of Service

Roadway Levels of Service

In consultation with staff of the City of Santa Clara, County of Santa Clara, and City of San Jose, 16 intersections in the City of Santa Clara and San Jose were selected for evaluation in the Transportation Impact Analysis (Fehr & Peers 2005a). The peak-hour turning movement volumes and the existing lane configurations were used to calculate the AM and PM peak-hour levels of service for the 16 study intersections. The results of the existing LOS analysis are

presented in Table 4-14 below. Corresponding calculation sheets are contained in Appendix J (see Appendix G of that report). The reported delays and levels of service represent operations for the intersections as a whole. Specific vehicle movements may operate at better or worse conditions.

Table 4-14
Existing Intersection Levels of Service

Intersection (Jurisdiction)	Peak Hour	Count Date	Average Intersection Delay [1]	LOS [2]
1. Newhall Street and Winchester Boulevard (CSC)	AM	5/11/04	19.0	B-
	PM	5/11/04	17.8	B
2. Pruneridge Avenue and San Tomas Expressway (County)	AM	5/11/04	41.8	D
	PM	5/11/04	43.7	D
3. Pruneridge Avenue and Saratoga Avenue (CSC)	AM	8/30/05	23.5	C
	PM	8/30/05	26.3	C
4. Pruneridge Avenue/Hedding Street and Winchester Boulevard (CSJ)	AM	5/13/04	32.6	C-
	PM	5/13/04	36.7	D+
5. Hedding Street and Bascom Avenue (CSJ) (Existing configuration)	AM	5/13/04	35.3	D+
	PM	5/13/04	38.0	D+
6. Forest Avenue and Winchester Boulevard (CSJ)	AM	8/30/05	19.9	B-
	PM	8/30/05	25.8	C
7. Forest Avenue/Naglee Avenue at Bascom Avenue (CSJ)	AM	8/30/05	35.6	D+
	PM	8/30/05	43.3	D
8. Dorcich Street and Winchester Boulevard (CSJ)	AM	8/30/05	9.3	A
	PM	8/30/05	14.4	B
9. Stevens Creek Boulevard and Saratoga Avenue (CSJ/CMP)	AM	5/12/04	32.9	C-
	PM	9/29/04	35.0	C-
10. Stevens Creek Boulevard and San Tomas Expressway (County/CMP)	AM	8/30/05	**56.2**	**E+**
	PM	9/30/04	**83.2**	**F**
11. Stevens Creek Boulevard and Winchester Boulevard (CSJ/CMP)	AM	5/11/04	33.3	D
	PM	10/14/04	41.7	D-
12. Stevens Creek Boulevard and Monroe Street (CSJ)	AM	5/12/04	26.2	C
	PM	5/12/04	35.7	D+
13. Stevens Creek Boulevard and Southbound I-880 Off-Ramp (CSJ/CMP)	AM	5/11/04	20.2	C+
	PM	10/5/04	20.3	C+
14. Tisch Way/Northbound I-280 On-ramp and Winchester Boulevard (CSJ)	AM	8/30/05	16.5	B-
	PM	8/30/05	24.2	C
15. Moorpark Avenue and Southbound I-280 Off-Ramp (CSJ/CMP)	AM	6/22/04	19.5	B-
	PM	9/29/04	23.9	C

Table 4-14
Existing Intersection Levels of Service

Intersection (Jurisdiction)	Peak Hour	Count Date	Average Intersection Delay[1]	LOS[2]
16. Moorpark Avenue and Winchester Boulevard (CSJ)	AM	5/12/04	37.5	D+
	PM	5/12/04	40.8	D

Notes: Unacceptable operations are highlighted in bold type, based on level of service thresholds of the jurisdiction in which each intersection is located.

CSC = City of Santa Clara intersection
CSJ = City of San Jose intersection
CMP = Designated CMP intersection
County = Santa Clara County intersection

[1] Average stopped delay per vehicle for signalized intersections and average control delay for stop-sign controlled intersections.

[2] LOS = Level of service.

Source: Fehr & Peers 2005a

City of Santa Clara Intersections

The results of the LOS calculations indicate that the two key intersections located in Santa Clara are operating at acceptable levels (LOS D or better) according to City of Santa Clara standards.

City of San Jose Intersections

The results of the LOS calculations indicate that all 12 of the intersections located in the City of San Jose currently operate at an acceptable level.

Santa Clara County Intersections

The results of the LOS calculations indicate that all county intersections are operating within acceptable standards with the exception of the intersection of Stevens Creek Boulevard and San Tomas Expressway which is currently operating at LOS E+ during the AM peak hours and LOS F during the PM peak hours.

CMP Intersections

Five of the key intersections are designated CMP intersections. One of the five intersections is currently operating at an unacceptable level based on the CMP standard of LOS E or better (i.e., intersection of Stevens Creek Boulevard and San Tomas Expressway is operating at LOS E+ during AM peak and LOS F during PM peak hours).

Existing Freeway Segment Levels of Service

Table 4-15 shows the existing freeway segment levels of service based on the segment densities reported in the VTA's 2002 CMP Monitoring and Conformance Report. Based on the monitored freeway segment densities, the following freeway segments are operating at an unacceptable level of service (LOS F) under Existing Conditions:

- Northbound I-280 – Winchester Boulevard to Saratoga Avenue (AM peak/mixed-flow lanes)
- Northbound I-280 – Meridian Avenue to I-880 (AM peak/mixed-flow lanes)
- Southbound I-280 – I-880 to Meridian Avenue (PM peak/mixed-flow lanes)
- Northbound I-880 – Bascom Avenue to The Alameda (AM peak hour)
- Northbound I-880 – Stevens Creek Boulevard to Bascom Avenue (AM peak hour)
- Northbound I-880 – I-280 to Stevens Creek Boulevard (AM peak hour)

The remaining freeway segments are operating at LOS E or better, which is the CMP minimum operating standard for freeways and regional roadways.

Table 4-15
Existing Freeway Segment Levels of Service [1]

Freeway	Segment	Direction & Lane Type	Peak Hour	No. of Lanes	Volume	Average Speed	Density	LOS [2]
I-280	Winchester to Saratoga	NB/WB MF	AM	3	5,940	33	30	**F**
		NB/WB HOV	AM	1	2,050	64	32	D
		NB/WB MF	PM	3	6,270	41	51	E
		NB/WB HOV	PM	1	740	67	11	A
		SB/EB MF	AM	3	6,300	42	50	E
		SB/EB HOV	AM	1	1,010	67	15	B
		SB/EB MF	PM	3	6,320	43	49	E
		SB/EB HOV	PM	1	2,170	62	35	D
I-280	Meridian to I-880	NB/WB MF	AM	3.7	4,220	10	114	**F**
		NB/WB HOV	AM	1	2,050	36	57	**E**
		NB/WB MF	PM	3.7	6,590	66	27	D
		NB/WB HOV	PM	1	200	67	3	A
		SB/EB MF	AM	3.7	6,970	65	29	D
		SB/EB HOV	AM	1	1,450	66	22	C
		SB/EB MF	PM	3.7	6,890	27	69	**F**
		SB/EB HOV	PM	1	2,170	62	35	D
I-880	Bascom to The Alameda	NB	AM	3	5,760	30	64	F
		NB	PM	3	5,150	66	26	C
		SB	AM	3	5,350	66	27	D
		SB	PM	3	5,860	31	63	E
I-880	Stevens Creek to Bascom	NB	AM	3	4,900	19	86	**F**
		NB	PM	3	4,950	66	25	C
		SB	AM	3	6,610	58	38	D
		SB	PM	3	6,270	41	51	E
I-880	I-280 to Stevens Creek	NB	AM	3	5,860	61	32	**F**
		NB	PM	3	3,420	67	17	B
		SB	AM	3	4,550	66	23	C
		SB	PM	3	6,050	65	31	D

Table 4-15
Existing Freeway Segment Levels of Service [1]

Freeway	Segment	Direction & Lane Type	Peak Hour	No. of Lanes	Volume	Average Speed	Density	LOS [2]
SR 17	I-280 to Hamilton	NB	AM	3	6,280	66	28	D
		NB	PM	3.4	6,630	65	30	D
		SB	AM	3	4,750	66	24	C
		SB	PM	3	6,430	63	34	D

Unacceptable operating levels are indicated in bold based on established thresholds.

[1] Source of lanes, volumes, and density: VTA's 2002 VTA CMP Database (April 2003).

[2] LOS is based on density.

MF = Mixed-Flow Lanes
HOV = High-Occupancy Vehicle Lane

Source: Fehr & Peers 2005a

4.10.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would have a significant transportation impact if it would:

- cause an increase in traffic which is substantial in relation to the existing traffic load and capacity of the street system;
- exceed, either individually or cumulatively, a level of service standard established by the county congestion management agency for designated roads or highways;
- substantially increase hazards because of a design feature or incompatible uses;
- result in inadequate emergency access;
- result in inadequate parking capacity; or
- conflict with adopted policies, plans, or programs supporting alternative transportation.

In addition to the above thresholds, thresholds for impacts to neighborhood streets have been developed based on research of traffic volume thresholds in other local and state jurisdictions. The methodology used to develop these thresholds is described in the Neighborhood Impact Analysis prepared by Fehr & Peers (September 2005) and is included in Appendix K. The project would result in significant neighborhood traffic impacts if it would:

- cause the average weekday daily traffic volume to exceed 1,500 vpd on a local residential street or 2,800 vpd on a residential collector street; or,
- increase the average weekday daily traffic volume by 150 vpd on any local or residential collector street, regardless of existing volume.

METHODOLOGY

The volume of traffic associated with the project was estimated using a three-step process: (1) trip generation, (2) trip distribution, and (3) trip assignment. In the first step, the traffic

volumes entering and exiting the project site were estimated. In the second step, the directions the trips use to approach and depart from the site were projected. Finally, the trips were assigned to specific street segments and intersection turning movements. Refer to Chapter 3 and Chapter 4 of Appendix K for a detailed description of methodology and background conditions assumed for the project.

IMPACT ANALYSIS

Impact 4.10-1

Construction-Related Impacts. *Construction activities for the project would result in the generation of up to 40 one-way truck trips per day associated with remediation activities and up to 300 one-way vehicle trips per day associated with construction activities. All construction vehicles and construction personnel would access the project site from Winchester Boulevard and would park in designated areas on the project site or in appropriate offsite areas designated for parking uses. No on-street parking would occur. The remediation and construction trips would not occur simultaneously as all remediation activities would be completed before project construction. The remediation and construction-related trips would be temporary and would not substantially increase existing roadway traffic volumes. This would be a less-than-significant impact.*

Construction of the project would result in short-term increases in traffic on local roadways. Construction activities would require the hauling of equipment and materials to the project site and transportation of employees to and from offsite locations. Construction activities would require up to 150 construction workers that would commute to the site on a daily basis over a period of 24 to 36 months. These construction workers would generate 300 one-way daily trips to and from the project site. Construction vehicles and construction personnel would access the project site from Winchester Boulevard only and would park all vehicles in designated areas on the project site or in appropriate offsite areas designated for parking uses (e.g., parking garage). No construction-related vehicles (i.e., equipment, personal vehicles) would be allowed to park along streets in the surrounding neighborhood. Existing roadway volumes along Winchester Boulevard are approximately 19,400 vehicles per day.

The project would require the excavation and removal of contaminated soils and the importation of clean fill material. Approximately 5,000 to 6,000 cubic yards of contaminated soil would be removed from the site and a similar volume of soil would be brought to the site as clean fill. If the entire soil volume (i.e., 6,000 cubic yard) is required to be imported, it is estimated that the remediation activities would last 1 to 2 months and generate 600 to 720 one-way truck trips over the remediation period. It is likely that no more that 40 truck trips would occur per day over a period of 1 to 2 months. Further, these trips would not occur simultaneously with the construction worker trips because all remediation activities would be completed before construction of project.

The soil excavation, site preparation, and construction-related vehicle and truck trips would be temporary and would cease once the project is constructed. Further, these trips would be less than 4% of existing local roadway traffic volumes. Because these trips would be temporary and

would not substantially increase traffic volumes along area roadways, this would be a less-than-significant impact.

Impact 4.10-2

Degradation of Level of Service (LOS) at Intersections. *The project would not substantially increase traffic volumes, delay, or volume-to-capacity ratios at intersections in the project vicinity. Further, traffic associated with the project would not exceed City of Santa Clara, City of San Jose, or CMP thresholds for acceptable traffic conditions. This would be a less-than-significant impact.*

The volume of traffic generated by the project was estimated based on rates in the Trip Generation published by the Institute of Transportation Engineers (ITE) (Sixth Edition, 1997). This document includes trip rates for various land uses and is a standard tool used for estimating traffic volumes. Additional information on daily trip generation of senior housing developments was obtained from the ITE website (Fehr and Peers 2005a). Observations of a representative City of Santa Clara park were conducted to provide supplemental PM peak-hour data for park uses.

The project includes 110 single-family dwelling units, 165 senior units, and a one-acre park. At the time the traffic analysis was prepared, a determination of the final number of single-family dwelling units had not been identified. The traffic analysis undertook a conservative approach to estimate the project-related impacts by assuming a total of 120 single-family dwelling units and 165 senior units on the project site. Therefore, the impacts presented in this section slightly overstate the impacts of the project that would ultimately be implemented. Regardless, appropriate ITE trip generation rates were applied to proposed land uses. The project is estimated to generate 2,159 daily vehicle trips, 121 AM peak-hour trips (36 inbound/85 outbound), and 170 PM peak-hour trips (106 inbound/ 64 outbound). Please refer to Appendix J of this Draft EIR for a breakdown of project-generated trips by land use type.

Intersection level of service (LOS) calculations were conducted to evaluate intersection operations under Project Conditions and under the Single-Family Development Option Conditions. The results of the LOS analysis for Background and Project Conditions are summarized in Table 4-16. Please refer to Appendix J of this Draft EIR for the LOS calculation sheets (Appendix B) and Background Conditions (Chapter 3).

With the addition of trips associated with the project, the intersection of Pruneridge Avenue and San Tomas Expressway is projected to continue to operate at an unacceptable LOS E during the PM peak hour; however, the project would only increase the volume-to-capacity ratio by 0.002, which is below applicable thresholds. The remaining City of Santa Clara and Santa Clara County (non-CMP) intersections evaluated are projected to operate at LOS B or C during both peak hours, which is acceptable based on City standards. This would be a less-than-significant impact.

Table 4-16
Background and Project Intersection Levels of Service

Intersection (Jurisdiction)	Peak Hour	Background		Project			
		Delay[1]	LOS[2]	Delay[1]	LOS[2]	Δ in Crit. Delay	Δ in Crit. V/C
1. Newhall Street and Winchester Boulevard (CSC)	AM	19.3	B-	19.3	B-	0.0	+0.003
	PM	18.1	B-	18.2	B-	+0.2	+0.006
2. Pruneridge Avenue and San Tomas Expressway (County)	AM	52.6	D-	52.9	D-	+0.5	+0.002
	PM	60.7	E	61.1	E	+0.5	+0.002
3. Pruneridge Avenue and Saratoga Avenue (CSC)	AM	23.6	C	23.6	C	0	+0.003
	PM	29.1	C	29	C	0	+0.004
4. Pruneridge Avenue/Hedding Street and Winchester Boulevard (CSJ)	AM	35.4	D+	35.5	D+	+0.1	+0.006
	PM	38.2	D+	38.7	D+	+0.8	+0.014
5. Hedding Street and Bascom Avenue (CSJ)	AM	53.2	D	53.6	D-	+2.2	+0.003
	PM	44.3	D	44.6	D	-0.8	+0.003
6. Forest Avenue and Winchester Boulevard (CSJ)	AM	19.9	B-	21.0	C+	+2.4	+0.046
	PM	26.3	C	23.0	C+	+0.9	+0.038
7. Forest Avenue and Naglee Avenue (CSJ)	AM	36.3	D+	36.4	D+	+0.1	+0.001
	PM	39.4	D	39.6	D	+0.3	+0.003
8. Dorcich Street and Winchester Boulevard (CSJ)	AM	8.9	A	9.1	A	+0.1	+0.006
	PM	13.8	B	13.6	B	-0.2	+0.007
9. Stevens Creek Boulevard and Saratoga Avenue (CSJ/CMP)	AM	37.0	D+	37.0	D+	0.0	+0.001
	PM	38.3	D+	38.3	D+	0.0	+0.002
10. Stevens Creek Boulevard and San Tomas Expressway (County/CMP)	**AM**	**89.3**	**F**	**89.8**	**F**	**+0.8**	**+0.002**
	PM	**93.2**	**F**	**93.8**	**F**	**0.0**	**0.000**
11. Stevens Creek Boulevard and Winchester Boulevard (CSJ/CMP)	AM	42.2	D	43.7	D	+1.4	+0.014
	PM	49.6	D	50.2	D	+1.7	+0.015
12. Stevens Creek Boulevard and Monroe Street (CSJ)	AM	36.3	D+	36.3	D+	0.0	+0.002
	PM	62.1	E	62.7	E	+0.4	+0.002
13. Stevens Creek Boulevard and Southbound I-880 Off-Ramp (CSJ/CMP)	AM	21.3	C+	21.3	C+	0.0	+0.002
	PM	25.4	C	25.5	C	+0.2	+0.006
14. Tisch Way/Northbound I-280 On-ramp and Winchester Boulevard (CSJ)	AM	18.2	B-	18.2	B-	+0.4	+0.007
	PM	34.9	C-	34.9	C-	+0.1	+0.002
15. Moorpark Avenue and Southbound I-280 Off-Ramp (CSJ/CMP)	AM	19.6	B-	19.6	B-	+0.1	+0.001
	PM	24.5	C	24.6	C	+0.2	+0.004
16. Moorpark Avenue and Winchester Boulevard (CSJ)	AM	38.6	D+	38.6	D+	0.0	+0.002
	PM	41.8	D	41.9	D	+0.2	+0.006

[1] Whole intersection weighted average control delay expressed in seconds per vehicle.
[2] LOS = Level of service.
CSC = City of Santa Clara intersection
CSJ = City of San Jose intersection
CMP = Designated CMP intersection
County = Santa Clara County intersection
Source: Fehr & Peers 2005a

The project would not significantly affect traffic conditions at any of the non-CMP City of San Jose intersections. All City of San Jose intersections are projected to continue to operate at LOS D or better during both peak hours under the project. Stevens Creek Boulevard and San Tomas Expressway intersection (a CMP intersection) is located under jurisdiction of Santa Clara County and is projected to continue to operate at LOS F during both peak hours with the addition of project-generated traffic. The project would result in an increased delay of 0.8 seconds in the AM peak hour, a 0.002 increase in the volume-to capacity ratio during AM peak hours, and no change to the volume-to-capacity ratio during PM peak hours, which is less than City of San Jose and CMP thresholds. The remaining key CMP intersections are projected to operate at LOS E or better under project conditions and traffic conditions would not substantially worsen with implementation of the project. This would be a less-than-significant impact.

Impact 4.10-3

Vehicular Site Access and Onsite Circulation Impacts. *Proposed vehicular circulation routes for the project would adequately serve the onsite housing units. The addition of a project roadway as a new leg could result in potential operational and safety problems at the Winchester Boulevard/Forest Avenue (east) intersection, if the signal remains in its current configuration. This would be a potentially significant impact.*

Access to the project site under the project would be provided via a roadway and driveway on Winchester Boulevard. The roadway would provide full-access to the site with minor modifications to the signal and the intersection. This driveway would form the west leg of the southern portion of the offset intersection. The second driveway would allow right turn only in and out and would be located south of the full access roadway. These access points would provide adequate ingress and egress to the site and could adequately serve project-related traffic volumes under peak hour conditions (Fehr and Peers 2005a). This would be a less-than-significant impact.

Winchester Boulevard has an offset intersection with Forest Avenue, with the west leg located approximately 80 feet north of the east leg. The main project site roadway would be located at the southern intersection across from Forest Avenue (east). There is a driveway cut that serves the project site, but is no longer being used. The main project site roadway would be incorporated into the Winchester Boulevard/Forest Avenue intersection to provide full access (i.e., allow both left and right turns) for vehicles entering and exiting the project site with minor modifications to the signal and the intersection. This intersection as it currently exists is projected to operate at an acceptable level of service using the adopted method for analyzing offset intersections (obtained from the City of Santa Clara and the City of San Jose TRAFFIX databases). However, the addition of a new roadway leg to this intersection would add new traffic to this intersection, and could result in operational and safety problems, including increased driver confusion at the shared left-turn/through lanes on Winchester Boulevard. This would be a potentially significant impact.

The conceptual site plan for the project includes an internal connection between the main access roadway and the senior housing facility. The vehicular circulation in the single-family housing development area includes access from Winchester Boulevard along the northern

boundary of the project site and a main circular roadway that provides access to the perimeter houses on the property (Exhibit 3-3). North-south alley ways provide access to the cluster of homes in the central portion of the site and to the perimeter circular roadway. Based on evaluation of the proposed internal circulation plan, it appears that onsite circulation plans would be adequate to accommodate project-related traffic (Fehr & Peers 2005a). This would be a less than significant impact.

The conceptual site plan for the senior housing portion of the project site would include a north/south roadway that connects to the main access roadway at the Winchester Boulevard/Forest Avenue intersection. This roadway provides perimeter access around the eastern and southern boundaries of the senior housing facility. This roadway also connects to the perimeter roadway of the single family development at the southern boundary of the site. Based on evaluation of the proposed internal circulation plan, it appears that onsite circulation plans would be adequate to accommodate project-related traffic (Fehr & Peers 2005a). This would be a less than significant impact.

Impact 4.10-4

Freeway Impacts. *The vehicle trips on nearby freeway segments would be less than 1% of existing freeway capacities under the project, which is below Santa Clara Valley Transportation Authority (VTA) thresholds. Therefore, this would be a less-than-significant impact.*

The study freeway segments were evaluated to determine if the project would contribute a substantial volume of project-related traffic during the AM and PM peak hours. Table 4-17 presents the capacities for each freeway segment, and the estimated number of trips added to each segment by the project. The results of the analysis indicate that the project would generate vehicle trips that are less than 1% of the capacity of each freeway segment, which is below VTA thresholds. Further, none of these freeway segments would require additional analysis. Therefore, the project's freeway segment impacts would be less than significant.

Impact 4.10-5

Impacts to Emergency Vehicle Access. *The project would provide adequate emergency access to the project site. However, construction vehicles could temporarily obstruct local roadways, which could impair the ability of local agencies to respond to an emergency in the project area. This would be a potentially significant impact.*

Under the project, emergency vehicular access to the senior housing facility would be provided via the roadway and driveway on Winchester Boulevard. Emergency access to the single-family homes would be provided via the main roadway off Winchester Boulevard and via an emergency vehicle-only access gate at Forest Avenue. Emergency access between the single family and senior housing development would be provided by an emergency access only driveway that connects the two developments in the center of the site. Emergency access under the single-family development option would be provided by the roadway and driveway on Winchester Boulevard and via an emergency vehicle-only access gate at Forest Avenue.

Table 4-17
Freeway Segment Analysis for Project

Freeway Segment	Direction & Lane Type	Peak Hour	No. of Lanes [1]	Capacity [2]	1% of Capacity	Project Trips	Requires Analysis?
I-280 Winchester to Saratoga	NB MF	AM	3	6,900	69	11	No
	NB HOV	AM	1	1,800	18	0	No
	NB MF	PM	3	6,900	69	8	No
	NB HOV	PM	1	1,800	18	0	No
	SB MF	AM	3	6,900	69	5	No
	SB HOV	AM	1	1,800	18	0	No
	SB MF	PM	3	6,900	69	14	No
	SB HOV	PM	1	1,800	18	0	No
I-280 Meridian to I-880	NB MF	AM	4	9,200	92	3	No
	NB HOV	AM	1	1,800	18	0	No
	NB MF	PM	4	9,200	92	10	No
	NB HOV	PM	1	1,800	18	0	No
	SB MF	AM	4	9,200	92	8	No
	SB HOV	AM	1	1,800	18	0	No
	SB MF	PM	4	9,200	92	6	No
	SB HOV	PM	1	1,800	18	0	No
I-880 Bascom to The Alameda	NB	AM	3	6,900	69	8	No
	NB	PM	3	6,900	69	7	No
	SB	AM	3	6,900	69	4	No
	SB	PM	3	6,900	69	11	No
I-880 Stevens Creek to Bascom	NB	AM	3	6,900	69	2	No
	NB	PM	3	6,900	69	2	No
	SB	AM	3	6,900	69	3	No
	SB	PM	3	6,900	69	8	No
I-880 Stevens Creek to I-280	NB	AM	3	6,900	69	5	No
	NB	PM	3	6,900	69	15	No
	SB	AM	3	6,900	69	12	No
	SB	PM	3	6,900	69	9	No
SR-17/I-280 to Hamilton	NB	AM	4	9,200	78	2	No
	NB	PM	4	9,200	78	5	No
	SB	AM	3	6,900	69	4	No
	SB	PM	3	6,900	69	3	No

[1] Source of lanes, volumes, and density: VTA's 2002 VTA CMP Database (April 2003).

[2] Capacity is based on 2,300 vehicles per hour per lane (vphpl) for mixed flow lanes and 1,800 vphpl for HOV lanes.

MF = Mixed-Flow Lanes
HOV = HOV Lane

Source: Fehr & Peers 2005a

Design and siting of all driveways would be done in consultation with the City of Santa Clara Public Works Department, City Fire Department, and City Police Department staff to ensure that the driveways provide adequate access for emergency vehicles (i.e., turning radii, lane width). Because the developers would be required to coordinate with the City Public Works Department, Fire Department, and Police Department to ensure adequate emergency access is provided, this would be a less-than-significant impact.

The majority of project construction would occur in the footprint of the project site; however, construction of proposed intersection improvements and proposed driveways could partially obstruct roadways in the project vicinity. Obstruction of these roadways could block or slow emergency response vehicles traveling on Winchester Boulevard and could adversely affect the response times of emergency response agencies depending on the time of day (i.e., peak hours). This would be a potentially significant impact.

Impact 4.10-6

Conformity with City Parking Requirements. *The project would provide adequate parking for the proposed single-family residential development in conformance with City parking standards. The senior housing facility proposes one parking space for each residential unit (165 spaces). If the PD zoning process determines that one parking space per senior housing unit is not the appropriate parking standard for this project, this could be a potentially significant impact.*

The City of Santa Clara's Zoning Ordinance requires a parking supply of two garage spaces for every single-family dwelling. The project would provide two-car garages for each single-family housing unit, which would be consistent with the City's parking requirements. The City's Zoning Ordinance does not identify separate parking requirements for senior housing; however, City staff has indicated that provision of one parking space per senior housing unit would be appropriate, subject to obtaining a parking variance from the City before project construction based on the lower automobile ownership and use by seniors. Further, the City has approved an average of about 0.8 spaces per unit for past senior housing projects. None of these projects have resulted in the generation of any major parking complaints from adjacent neighbors (Ordonez, pers. comm.., 2005). Parking requirements would be determined through the Planned Development zoning process. The conceptual plan for the senior housing facility includes one space for each residential unit, for a total of 165 spaces. If the PD zoning process determines that one parking space per senior housing unit is not the appropriate parking standard for this project, this could be a potentially significant impact.

Impact 4.10-7

Demand for Public Transportation. *Bus routes that serve the project site have capacity available to serve residents of the project and the development option. This would be a less-than-significant impact.*

The Santa Clara VTA operates fixed route, commuter, and paratransit bus service and light rail transit service (LRT) in Santa Clara County and was contacted to obtain load factors for the bus routes that serve the project site (Routes 23, 36, and 60). The Santa Clara VTA indicated that all bus routes are operating at load factors of 0.68 (i.e., 68%) or less, as presented in Table

4-18. As a result, all bus routes serving the project site would have adequate capacity to serve residents of the proposed development. This would be a less-than-significant impact.

Table 4-18
Existing Load Factors

Bus Route	Direction	Peak Load	Capacity	Load Factor
23	Eastbound	24	38	0.63
23	Westbound	26	38	0.68
36	Eastbound	7	38	0.18
36	Westbound	9	38	0.24
60	Eastbound	16	38	0.42
60	Westbound	15	38	0.39

Source: Fehr & Peers 2005a

Impact 4.10-8

Pedestrian and Bicycle Circulation Impacts. *The project would add pedestrian demand across Winchester Boulevard and would increase demand for bicycle facilities. Specific information on improvements to offsite pedestrian facilities and the project's bicycle facilities is not available at this time. This could be a potentially significant impact.*

According to VTA criteria, the project would result in a significant impact to bicycles and pedestrians if the project conflicts with an existing or planned facility/service or adds demand to one of these modes that is not adequately accommodated by appropriate facilities or services. The project would construct sidewalks and pedestrian paths throughout the development. These sidewalks would provide pedestrian connections in the site, to Winchester Boulevard, and to the park.

The project site is located across Winchester Boulevard from the Valley Fair Transit Center and a shopping center that includes the Valley Fair Mall and a Safeway. The project would increase the number of pedestrians crossing Winchester Boulevard to access local commercial development. Pedestrian improvements would be included with intersection improvements at Winchester Boulevard and Forest Avenue and could accommodate increased pedestrian demand. However, specific information on the design of these offsite facilities is unknown at this time; therefore, the project could result in inadequate access to offsite pedestrian facilities. This would be a potentially significant impact.

The VTA's Bicycle Technical Guidelines recommend providing one Class I bicycle parking space per every 30 park employees and one Class II parking space per 9 park users during peak daylight times of the peak season; however, the City of Santa Clara Parks and Recreation Department would determine the type and number of bicycle facilities required at the project site. Class I bicycle parking includes bike racks or a secure room with key access for regular bicycle commuters. Class II bicycle parking is a bike rack to which the frame and at least one wheel can be secured with a user-provided U-lock or padlock and cable. For senior

apartments, the Guidelines recommend providing one Class I bicycle parking space per 30 units plus one Class II space per 30 units. For senior housing units the VTAs Bicycle Technical Guidelines recommend providing one Class I and one Class II bicycle parking space per 30 units. Specific information on the project's bicycle and pedestrian facilities is not available at this time. Because the project could result in the inadequate provision of bicycle facilities, this would be a potentially significant impact.

Impact 4.10-9

Neighborhood Impacts. *The project would not cause any of the study area street segments to exceed their total volume threshold, and would not cause the exceedances of the weekday daily traffic volume increase threshold of 150 vehicles per day with or without the recommended Winchester Boulevard/Forest Avenue intersection modifications. Therefore, this would be a less-than-significant impact.*

The transportation analysis evaluated the impacts of the project on roadway capacity and concluded (above) that the project would have less-than-significant impacts on the surrounding roadway system. A neighborhood analysis was conducted, the purpose of which was to determine whether project-related traffic would constitute a "livability" impact on surrounding neighborhood streets. A copy of this analysis is presented in Appendix K.

The study area for the neighborhood analysis is bounded by Pruneridge Avenue on the north, Stevens Creek Boulevard on the south, Cypress Avenue on the west, and Winchester Boulevard on the east. Existing 24-hour traffic volumes that represent the typical average weekday traffic conditions were gathered and are summarized in Table 4-19 and presented in Table 1 of Appendix K.

Table 4-19
Existing Daily Traffic Volumes

Street	Location	Traffic Volumes (vehicles per day)
Forest Avenue	Jill to Winchester	860
	Henry to Pineview	842
	Doug Lane to Westridge	995
Fernwood Avenue	Winchester to Jill	199
Jill Avenue	Pruneridge to Forest	217
Crestview Drive	Pruneridge to Forest	168
Pineview Drive	Pruneridge to Forest	214
Henry Avenue	Pruneridge to Forest	321
	Dorcich to Cecil	755
Dorcich Street	Henry to Cecil	560
Cecil Avenue	Henry to Dorcich	478
Cypress Avenue	Forest to Cecil	2,037
Source: City of Santa Clara and Fehr & Peers 2005b		

As described above, the project is estimated to generate 2,159 daily trips and 170 PM peak-hour trips (106 inbound and 64 outbound). The project trips approaching the site from the west on Stevens Creek Boulevard and on Pruneridge Avenue and departing from the site to westbound Stevens Creek Boulevard were assigned to the roadway network in the study area to reflect the potential use of neighborhood streets. The trip assignments were based on the peak period travel time surveys and field review (Fehr & Peers 2005b). The results of the travel time surveys indicated that there is no substantial time savings by using alternate travel routes through the neighborhood versus using the more direct arterial routes. Furthermore, during non-peak hours, congestion on the arterials is less than during the PM commute period. Travel times on the arterial routes are likely to be improved during other hours of the day because (1) these routes are more direct, (2) less vehicle queuing at signalized intersections creates more right-turn-on-red opportunities, and (3) actuated traffic signals at major intersections run on shorter cycle lengths when traffic demand is lower, resulting in shorter delays. Based on these results, the analysis assumes a conservatively high usage of neighborhood streets (40 to 50% during the PM peak hour and 10% during an entire day). The estimated trip assignment is presented in Figure 2a of Appendix K for the project with the existing signal configurations at the Winchester Boulevard/Forest Avenue intersection (i.e., the primary project access is added as the west leg of the southern Forest Avenue intersection).

Estimated PM peak hour and daily traffic volumes added to neighborhood streets by the project are summarized in Table 4-20. With the existing design of the Forest Avenue/Winchester Boulevard intersection, the greatest projected increase in traffic occurs on the segment of Forest Avenue between Winchester Boulevard and Jill Avenue under the project. The project is projected to result in 11 one-way vehicle trips on this roadway segment during the PM peak hour, which is on average less than one vehicle every 5 minutes. Overall, the project would result in an increase of 15 PM peak-hour trips and 38 daily trips throughout the neighborhood roadway network.

Mitigation recommended as part of Impact 4.10-3 would modify the Forest Avenue/ Winchester Boulevard intersection by adding the project driveway to the existing signalized intersection and restricting the intersection of the west leg of Forest Avenue with Winchester Boulevard to right turns only (Exhibit 4-11a). Table 4-21 presents the change in traffic volumes on neighborhood streets with the intersection modification under the project. Refer to Figure 3a of the Neighborhood Impact Analysis in Appendix K for an illustration of the change in traffic volumes with the proposed Winchester Boulevard/Forest Avenue modification under the project. Figure 4a in Appendix K graphs the change in peak hour and daily volume on each of the street segments with each configuration under the project.

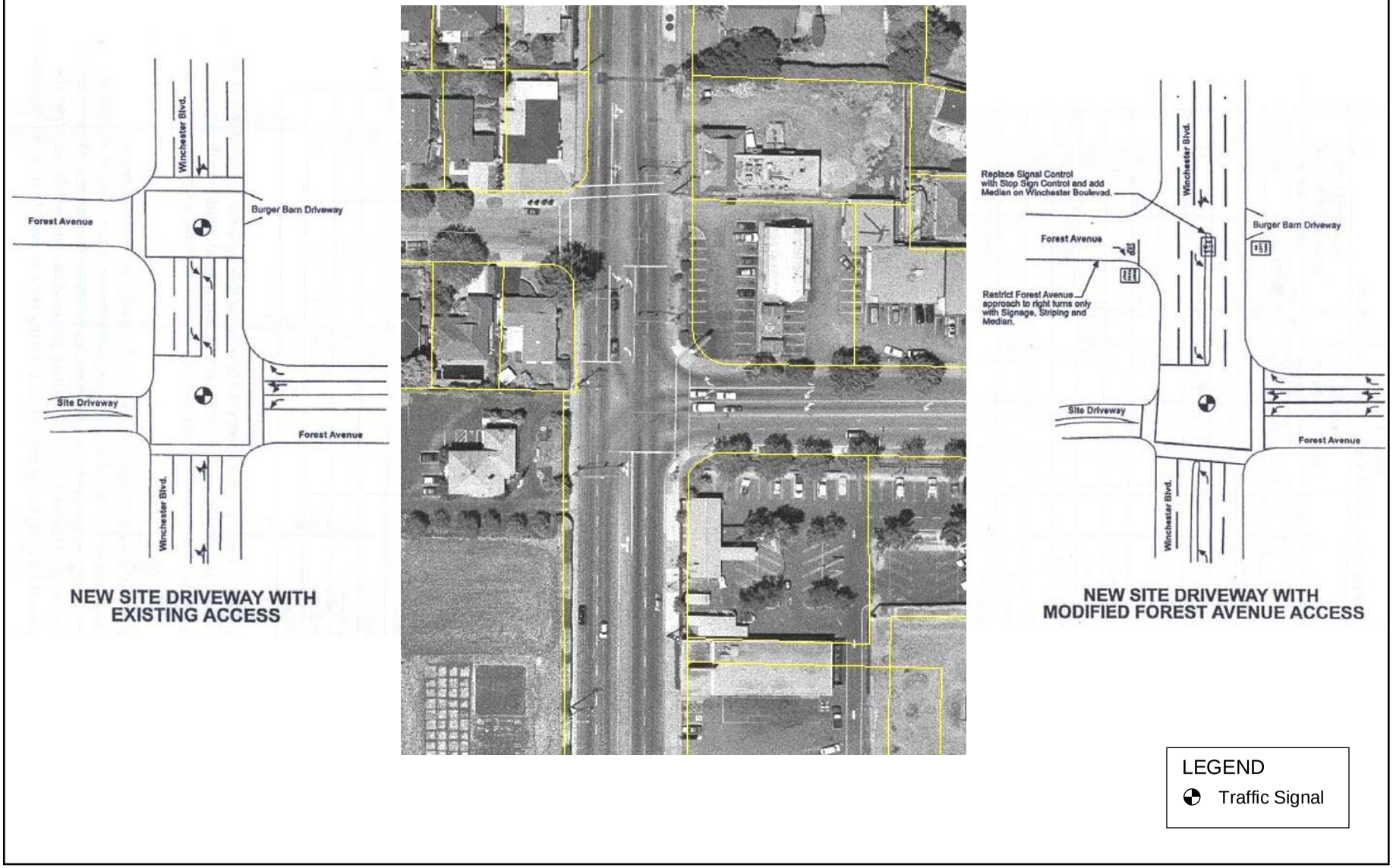
Although the intersection modification would not affect the project's trip assignment through the neighborhood, during the PM peak-hour, it is projected that 19 vehicles would be diverted to other driving routes (Fehr & Peers 2005b). With the intersection modification, vehicle trip volume reductions on Forest Avenue between Henry Avenue and Winchester Boulevard would occur because vehicles would be diverted to other neighborhood entry and exit paths including: using Stevens Creek Boulevard and turning right on Henry Avenue; turning left

onto Dorcich Street and then right on Henry Avenue; turning left on Fernwood Avenue and then left on Jill Avenue to arrive at Forest Avenue; or, turn left on Pruneridge Avenue then left to Jill Avenue, Pineview Drive, or Crestview Drive.

Table 4-20
Project Net Added Traffic by Roadway Segment

Roadway Segment	Project Added Traffic (existing Forest/Winchester intersection design)		Project Added Traffic (proposed Forest/Winchester intersection Design)	
	PM Peak Hour	Daily	PM Peak Hour	Daily
Cypress-Pruneridge to Forest	0	0	0	0
Cypress-Forest to Stevens Creek	+2	+6	+2	+6
Henry-Pruneridge to Forest	0	+2	0	+2
Henry-Forest to Dorcich	+4	+6	+10	+67
Henry-Dorcich to Cecil	+6	+13	+6	+13
Henry-Cecil to Stevens Creek	+8	+19	+8	+19
Pineview-Pruneridge to Forest	0	+2	0	+8
Crestview-Pruneridge to Forest	+2	+3	+3	+15
Jill-Fernwood to Forest	+3	+6	+8	+51
Jill-Pruneridge to Fernwood	+3	+6	+5	+24
Fernwood-Jill to Winchester	0	0	+5	+49
Forest-Cypress to Henry	+2	+6	+2	+6
Forest-Henry to Pineview	+6	+14	0	-47
Forest-Pineview to Crestview	+6	+16	-2	-76
Forest-Crestview to Jill	+8	+19	-3	-114
Forest-Jill to Winchester	+11	+25	-4	-142
Dorcich-Henry to Cecil	+2	+7	+8	+63
Dorcich-Cecil to Winchester	+4	+13	+10	+74
Cecil-Henry to Dorcich	+2	+6	+2	+6
Source: Fehr & Peers 2005b				

With the project, it is anticipated that there would be a reduction of 0 to 4 vehicle trips during the PM peak hour and 50 to 140 trips on a daily basis. The greatest increase in PM peak-hour traffic (10 one-way trips) would occur on Henry Avenue between Forest Avenue and Dorcich Street and on Dorcich Street between Winchester Boulevard and Cecil Avenue. This represents an increase of approximately 1 vehicle every 6 minutes. The greatest daily increase in vehicle trips (74 one-way vehicle trips) is projected to occur on Dorcich Street between Cecil Avenue and Winchester Boulevard.



Source: Fehr & Peers, City of Santa Clara 2004

Conceptual Site Access Design and Winchester/Forest Intersection Modification

EXHIBIT 4-11a

Santa Clara Gardens Development Project Draft EIR

NOT TO SCALE

NORTH

EDAW

P 3T008.01 12/03

Table 4-21
Change in Total Daily Traffic Volumes with Santa Clara Gardens Project

Street	Location	Existing Volume (vpd)[1]	With Santa Clara Gardens Project and Existing Forest Access			With Santa Clara Gardens Project and Modified Forest Access		
			Added (vpd)	Total (vpd)	% Change	Added (vpd)	Total (vpd)	% Change
Forest Avenue	Jill to Winchester	860	25	558	2.9%	-142	713	-16.5%
	Henry to Pineview	842	14	856	1.7%	-47	795	-5.6%
	Henry to Cypress	995	6	1,001	0.6%	6	1,001	0.6%
Fernwood Avenue	Winchester to Jill	199	0	199	0.0%	49	248	24.6%
Jill Avenue	Pruneridge to Forest	217	6	223	2.8%	51	268	23.5%
Crestview Drive	Pruneridge to Forest	168	3	171	1.8%	15	183	8.9%
Pineview Drive	Pruneridge to Forest	214	2	216	0.9%	8	222	3.7%
Henry Avenue	Pruneridge to Forest	321	2	323	0.6%	2	323	0.6%
	Forest to Cecil	755	13	468	1.7%	67	822	8.9%
Dorcich Street	Henry to Winchester	560	13	573	2.3%	74	634	13.2%
Cecil Avenue	Henry to Dorcich	478	6	484	1.3%	6	484	1.3%
Cypress Avenue	Forest to Cecil	2,037	6	2,043	0.3%	6	2,043	0.3%

[1] vpd= vehicles per day

Source: Fehr & Peers 2005a

The traffic volume increases that occur on some neighborhood streets with the Winchester Boulevard/Forest Avenue intersection modification reflect the redirection of existing neighborhood traffic on Forest Avenue to other streets in the neighborhood, not the addition of new vehicle trips from the project. Overall, the recommended modification would reduce traffic volumes in the neighborhood by shifting some trips to Pruneridge Avenue.

The projected change in peak hour traffic under the project and with or without the Winchester Boulevard/Forest Avenue intersection modification is less than 11 vehicles on any segment in a one-hour period and is considered negligible (Fehr & Peers 2005b). Therefore, daily traffic volumes were used to identify potential traffic impacts on neighborhood streets.

The projected changes in daily traffic volumes on neighborhood streets with and without the Winchester Boulevard/Forest Avenue intersection modification were added to existing daily traffic volumes for the study street segments to determine the percent increase in traffic as a result of the project. The change in total daily traffic volumes results for the project are

presented in Table 4-21. The total daily traffic volumes for the project are presented in Figure 3a of the Neighborhood Impact Analysis in Appendix K.

The daily traffic volumes on all local street segments, with the exception of Cypress Avenue and Forest Avenue between Henry Avenue and Cypress Avenue, would be less than 1,000 vehicles per day (vpd) under the project and with or without the Winchester Boulevard/Forest Avenue intersection modification. Further, the greatest absolute increase in vehicle trips would be 74 trips on Dorcich Street between Henry and Cecil with the Winchester Boulevard/Forest Avenue intersection modification. The project would not cause any of the study street segments to exceed their total volume threshold (i.e., 1,500 for local streets and 3,000 for connector streets), and would not cause the exceedances on any street of the weekday daily traffic volume increase threshold of 150 vpd with or without the recommended Winchester Boulevard/Forest Avenue intersection modification. Therefore, this would be a less-than-significant impact.

4.10.3 MITIGATION MEASURES

No mitigation measures are necessary for the following less-than-significant impacts.

Impact 4.10-1: Construction-Related Impacts.
Impact 4.10-2: Degradation of LOS at Intersections.
Impact 4.10-4: Freeway Impacts.
Impact 4.10-7: Demand for Public Transportation.
Impact 4.10-9: Neighborhood Impact.

Mitigation is recommended for the following potentially significant impact.

4.10-3: Vehicular Site Access and Onsite Circulation Impacts. The project developers shall coordinate with the City of Santa Clara Public Works Department and the City of San Jose Public Works Department to re-design the traffic signal control of the Forest Avenue (west) intersection with Winchester Boulevard. The redesign could include restricting this intersection to right-turns only (Exhibit 4-11a) so that the developments northerly roadway becomes the west approach to the modified intersection. The project driveway could then be accommodated at the Winchester Boulevard/Forest Avenue (east) intersection in a more typical configuration with fewer conflicting turning movements. With this modification, all of the existing traffic that is currently turning left at the Winchester Boulevard/Forest Avenue (west) intersection would be redirected to other routes, including the intersections of Winchester Boulevard with Pruneridge Avenue/Hedding Street and Winchester Boulevard with Dorcich Street. Traffic modeling for these intersections with the additional project-related trips indicates that all three intersections would operate at acceptable levels. The recommended intersection improvements would result in the Winchester Boulevard intersection with Pruneridge Avenue/Hedding Street continuing to operate at LOS C and D, and intersections

of Winchester Boulevard at Forest Avenue (east) and at Dorcich Street are projected to operate at LOS B and C, respectively. An alternate design concept for this improvement is shown in Exhibit 4.11-b. This design would result in the same operational improvements as the option described above and could be constructed within the existing roadway alignment. The City of San Jose shall approve of the traffic re-design for the signal at the Forest (west)/Winchester intersection.

The following design/operational options to the above mitigation measure could be implemented to mitigate this impact. None of these options would require greater right-of-way access than the above intersection improvement.

- Implement the above intersection improvement, except prohibit left turn access from South Winchester Boulevard to the Burger Barn driveway by extending the roadway median island;

- Implement the above intersection improvement and allow left turn access from South Winchester Boulevard to the Burger Barn driveway, and allow left turn access from Forest Avenue to northbound Winchester Boulevard; and

- Implement the above intersection improvement, except create an additional left-turn lane (i.e., restriping or reconfiguration within existing right-of-way) to allow left turn access from northbound Winchester Boulevard to westbound Forest Avenue.

4.10-5: Impacts to Emergency Vehicle Access. The developers shall prepare a Construction Management Plan and submit the plan to the City of Santa Clara Public Works Department and City of San Jose Public Works Department for review and approval. The Construction Management Plan shall identify the timing of construction and the timing of elements that would result in the full or partial blockage of local roadways. The plan shall specify the measures that would be implemented to minimize traffic-related impacts including construction parking during construction, which shall be limited to onsite areas or facilities designated for parking uses (i.e., parking garage). These measures could include, but are not limited to the following: use of signage notifying travelers that they are entering a construction zone, and use of cones, flaggers, and guide-vehicles to direct traffic through the construction zone. A copy of the plan shall be submitted to local emergency response agencies and these agencies shall be notified at least 14 days before the commencement of construction that would partially or fully obstruct local roadways.

4.10-6: Conformity with City Parking Requirements. The senior housing developer shall coordinate with the City of Santa Clara Planning Department to identify the required number of parking spaces for the senior housing development. The developer shall design the senior housing facility to provide the appropriate number of spaces.

Source: Fehr and Peers 2006

Intersection Design Alternative

EXHIBIT 4-11b

4.10-8: Pedestrian and Bicycle Circulation Impacts. The developers shall coordinate with the City of Santa Clara Public Works Department and the Santa Clara VTA to identify the necessary offsite pedestrian and onsite bicycle facilities to serve the proposed development. These facilities shall be incorporated into the project. Pedestrian facilities could include, but are not limited to the following: marked crosswalks, curb cuts, pedestrian signal heads, and signal timing at the intersection of Winchester Boulevard and Forest Avenue. Circulation and access facilities at the proposed park shall include sidewalks that meet American with Disability Act Standards, curb cuts, and signage. Bicycle parking shall conform to VTA standards and shall be located in a high visibility area to encourage bicycle travel and discourage vandalism.

4.10.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

With implementation of the above mitigation, the project's emergency vehicle access (Impact 4.10-5), parking (Impact 4.10-6), and bicycle and pedestrian impacts (Impact 4.10-8) would be reduced to a less-than-significant level because project developers would be required to prepare appropriate plans and project designs to avoid these impacts.

However, mitigation improvements recommended to reduce the project's vehicular site access impact (Impact 4.10-3) are under the jurisdiction of the City of San Jose and not under the control of the City of Santa Clara. It is uncertain at this time whether the mitigation improvements would be implemented. If this mitigation measure were not implemented, this would be a potentially significant and unavoidable impact of the project.

4.11 CULTURAL RESOURCES

The purpose of this section is to determine potential cultural resource impacts associated with development and implementation of the project. This section is based on an archaeological survey report prepared by Holman & Associates in October 2002, a Historic Evaluation Report prepared by Ward Hill Consulting in October 2002 (Appendix L), and a field visit performed by an EDAW architectural historian and botanist in December 2005. An evaluation to determine the property's potential to qualify as a cultural landscape, and background research conducted by EDAW in December 2005 were also used in this investigation on February 8, 2006 a meeting was held with the State Office of Historic Preservation to discuss the results of the project's historic investigation. On February 8, 2006 a meeting was held with the State Office of Historic Preservation to discuss the results of the project's historic investigation.

Because the project site is underlain by alluvial soils that are of Holocene age (i.e., less than 10,000 years), it is unlikely that the project would disturb any potential paleontological resources during soil disturbing activities. Paleontological resources typically occur in soils that are greater than 10,000 years old. Therefore this issue is not evaluated further in this Draft EIR.

4.11.1 ENVIRONMENTAL SETTING

Holman & Associates performed background research at the Northwest Information Center at Sonoma State University in 2002 to identify known archaeological sites in or around the project area and to determine whether the property had been previously surveyed for archaeological resources. After completing the record search, the project area was field-inspected by a qualified archaeologist walking transects across the project site. No archaeological resources were encountered during this investigation (Holman & Associates 2002; Appendix L).

A Historic Evaluation Report of the 10 extant structures on the project site was completed in October 2002 by Ward Hill, Consulting Architectural Historian (Appendix L). This evaluation included background research conducted in the City of Santa Clara at the Bancroft Library, the Santa Clara County Historical and Genealogical Society, the California State Library, and other repositories containing pertinent information. A physical inventory and evaluation of site structures to determine their eligibility for listing on the California Register of Historical Resources (CRHR) was also conducted during this investigation (Hill 2002).

Primary and other secondary sources examined by EDAW in 2005 included: historic maps and plats, deed records, local and county histories, and city directories. Oral history interviews with Clyde Elmore, UC Davis Cooperative Extension Weed/Horticulture Specialist, Retired, and Nancy Garrison, Santa Clara County Cooperative Extension Specialist, Retired, were conducted to supplement, through narrative descriptions, the history of the BAREC property and additional information on its plantings. Several libraries and repositories were visited during this study including: the Santa Clara Public Library, the San Jose Public Library, the Santa Clara County Assessor's office, History San Jose's Archives and Museum, and the

California State Library's California History Room. The earliest maps depicting the project region (Exhibits 4-12 through 4-15) do not include much detail as the BAREC site was located on the margins of more densely built-up areas.

PREHISTORIC AND ETHNOGRAPHIC SETTING

The following information on the prehistoric archaeology and ethnography of project area and its vicinity is summarized primarily from Moratto (1984).

The Paleo-Indian Period (8,000–6,000 B.C.). There is minimal evidence of occupation in the southern San Francisco Bay Area during this period, possibly because of the rapid burial of archaeological materials because of rising ocean levels as a result of the melting of continental glaciers after 13,000 B.C.

The Lower Archaic Period (6,000–3,000 B.C.). There is minimal evidence of human use of the southern San Francisco Bay Area during this period. However, sites located along the southern California coast have yielded information that indicates that occupants of this area increased the use of seed bearing plants during this time. The use of readily available seeds increased the potential for food surplus and storage, and, as a result, may have increased availability of food over longer time periods and could have facilitated settlement along southern and central California coasts. Manos and metates commonly occur at sites throughout southern California at this time.

The Middle Archaic Period (3,000–500 B.C.). People began to inhabit and exploit areas directly adjacent to San Francisco Bay during this time. Around 2,500 B.C. plant resources may have been used more frequently. In particular, the use of hard seeds is apparent, as evidenced by the presence of milling tools that have been found in the area. The appearance of mortars and pestles may indicate the increased importance of acorns in the diet. Large projectile points from upland sites could indicate an increased emphasis on the hunting and processing of large game. Fishing implements have also been recovered from sites dating to the period. The presence of semi-exotic chipped stone materials may reflect increased group mobility, because these stones are not naturally found in the local area.

The Upper Archaic Period (500 B.C.–A.D. 1,200). Characteristic markers of the Upper Archaic Period include the use of red pigments, quartz crystals, edge-notched stone weights, and bone implements including whistles, scapula saws, and elk antler wedges. Haliotis and Olivella ornaments became important exchange articles during this period. Shell ornaments from central and southern California were transported east to the Great Basin, and obsidian was transported to the coast from eastern Sierra sources, the Coso area, and the North Coast Ranges. Southern Bay Area populations were more sedentary, as is evidenced by the presence of large shell mounds.

The Emergent Period (A.D. 1,200–contact). Trade and interaction between groups continued. Socio-political complexity may have increased, possibly in response to trade and economic relationships. The Augustine Pattern, found in sites dating to the Emergent Period, was characterized by continued use of mortars and pestles, some with applique beads, stone

Source: Compiled by Bailey & Phillips, Real Estate Agents, 1887

1887 Map of Santa Clara County

EXHIBIT 4-12

tobacco pipes, and small projectile points used with the recently introduced bow and arrow technology. Distinct shell bead and ornament patterns appear, including the distinctive "banjo" *haliotis* pendant that may be derived from the Kuksu cult in the Central Valley.

Ethnographically, the project area was inhabited by the Ohlone. The Ohlone are a Costanoan (or Penutian) speaking people who arrived in the area around A.D. 500. They inhabited the area from central San Francisco Bay to Monterey and east to the crest of the Coast Ranges. Ohlone settlement patterns were based on triblet groupings, with kinship or marriage ties between specific settlements. Each triblet might be represented by one or more permanent villages and camps in their territories (Levy 1978).

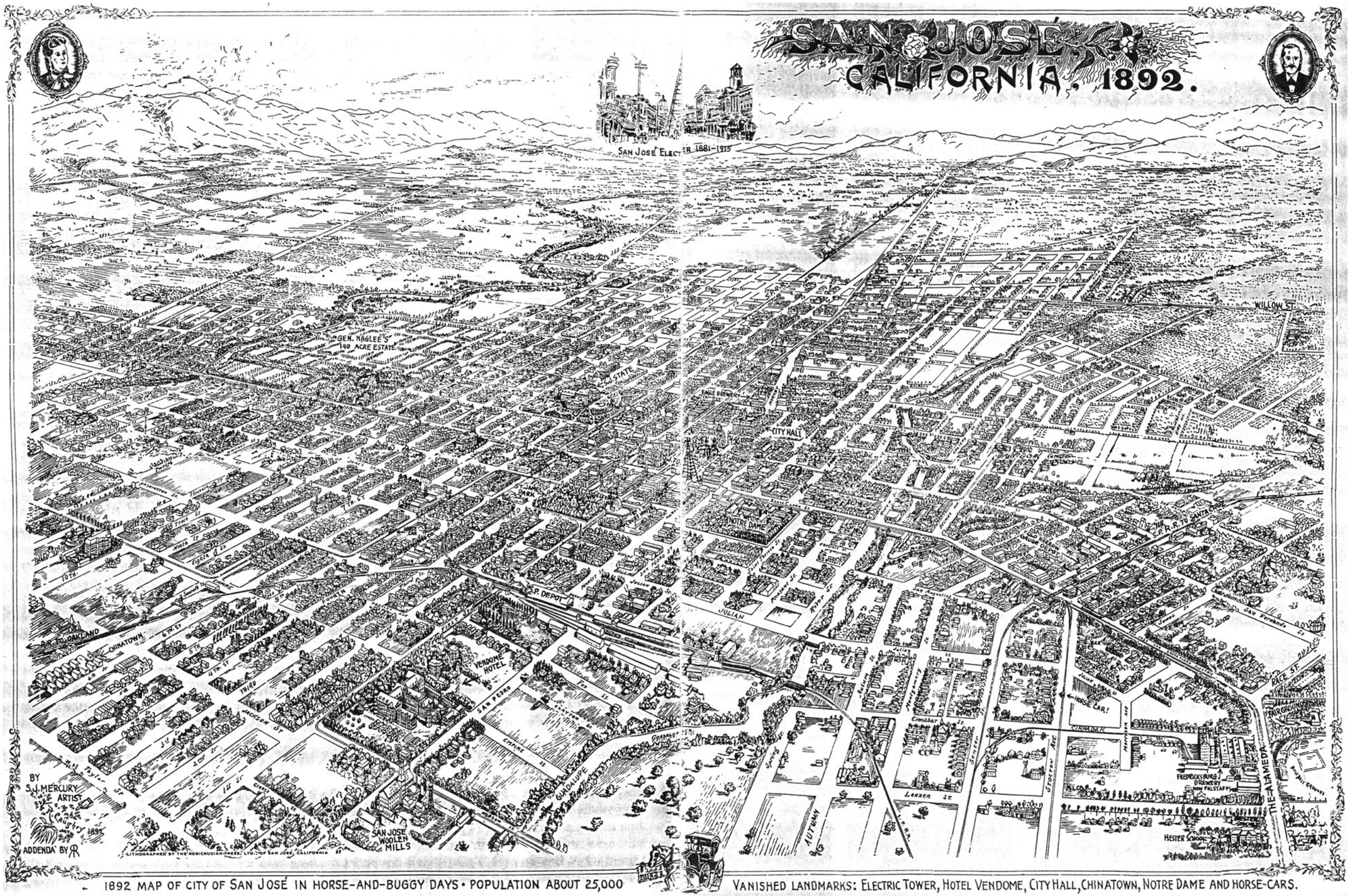
The Ohlone followed a seasonal round of resource exploitation, breaking into small groups to obtain foodstuffs, or occasionally moving entire villages to take advantage of seasonally available flora and fauna. Ohlone territory included grassland, woodland, chaparral, coastal, estuarine, and tidal marsh environments. Tule reeds were extensively used, as were brush, grass, or thatch, to make boats, rafts, or houses. Sweat lodges, dance houses, and assembly houses would have been important components in any village and cemeteries were located near the edge of a village (Levy 1978). In general, Ohlone lifeways remained unchanged for centuries prior to the large-scale incursions of Euro-Americans starting in the latter part of the 19th century.

HISTORIC SETTING

Regional History

Although trappers, traders, and explorers had been passing through the Santa Clara region for decades, permanent European settlement of the general area began in 1777 with the establishment of Mission Santa Clara, a Spanish mission on the banks of the Guadelupe River (Hoover et al. 1990). Floods damaged the church in 1779, and the building location was moved to higher ground. The new mission was dedicated by Father Junipero Serra in 1784. After secularization of the missions, the mission lands were confiscated, divided into land grants and the buildings subsequently became neglected. In 1851, Santa Clara College was established in the old mission buildings by the Rev. John Nobili, S.J. The population in the area grew slowly until the Gold Rush created the need for a more diverse local industrial base.

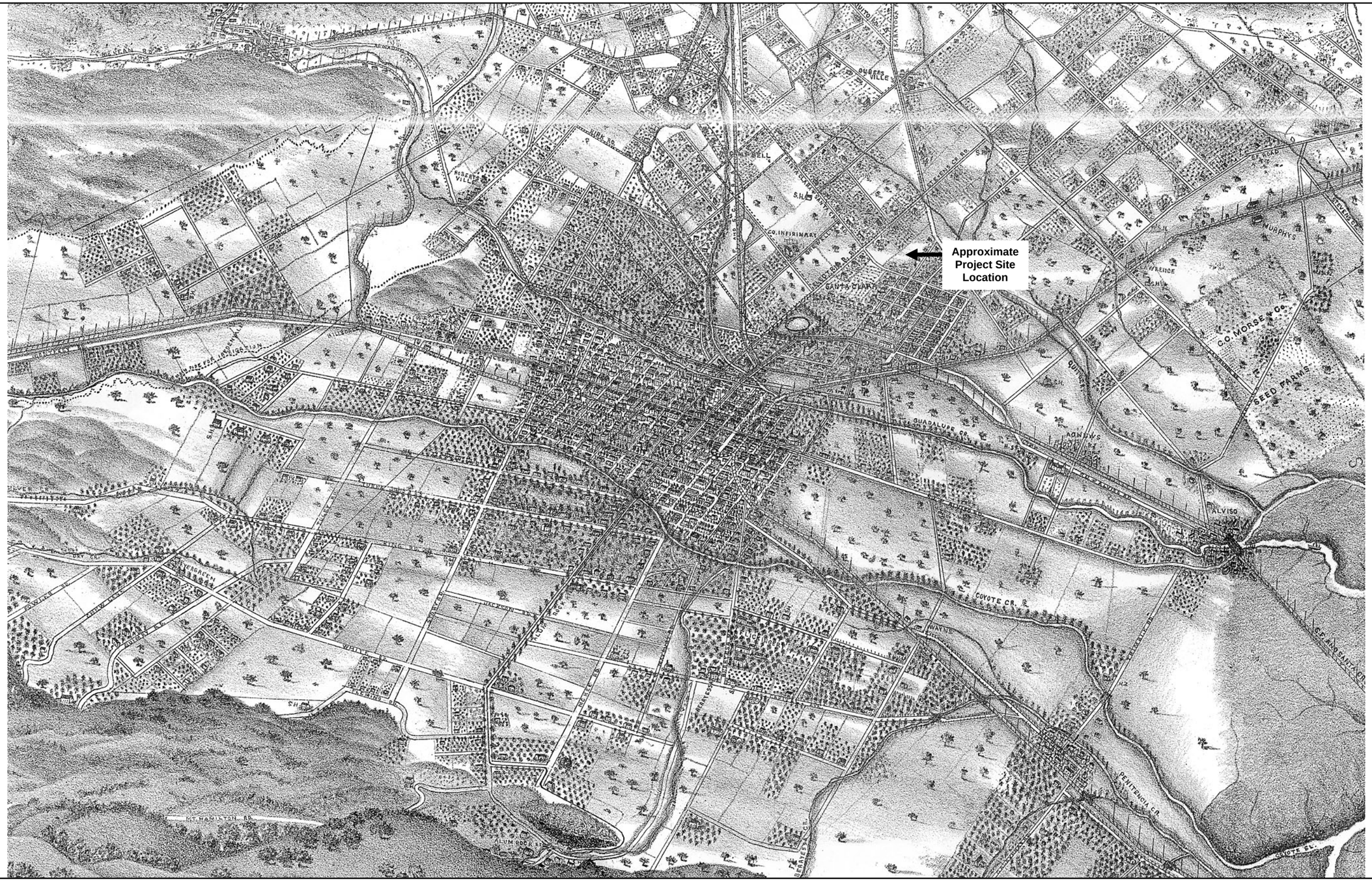
In 1848, California became a United States territory as a result of the Treaty of Guadalupe Hidalgo, ending the war with Mexico. California was formally admitted as a state in 1850. After admission, Santa Clara County was one of the original 27 counties created by the California legislature. The Gold Rush of 1849 brought with it an influx of immigrants to California. With the increased population, a large market for agricultural products was created. The Santa Clara Valley gradually shifted from an economy based on livestock grazing to farming. As a result of population growth and settlement, the town of Santa Clara was incorporated in 1852, and two colleges were established in 1851 and 1852. The first major business in Santa Clara was the Wampach Tannery. Other enterprises that developed around this time included seed purveyors, lumber companies, and support operations such as banks and hotels (Hill 2002).



Source: Adventure Valley: Streets of Santa Clara Valley Pioneers by Ralph Rambo, Santa Clara 1970

1892 Map of San Jose

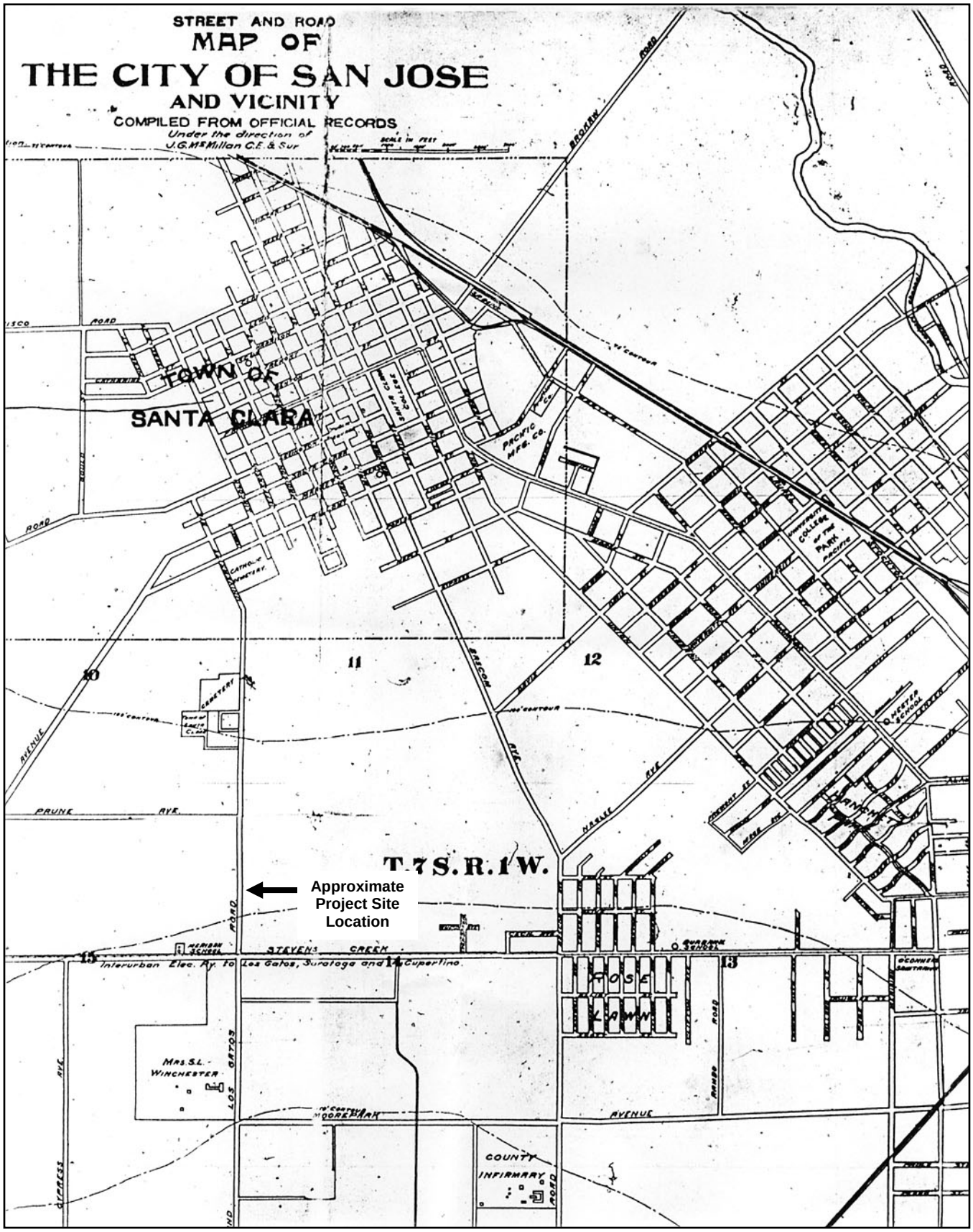
EXHIBIT 4-13



Source: On file, History of San Jose Archives

1895 Bird's Eye View of Santa Clara County

EXHIBIT 4-14



Source: Compiled from Official Records, J.G. McMillan C.E. & Sur

1909-10 Map of San Jose and Vicinity

EXHIBIT 4-15

Agriculture continued as the basis for the regional economy until the early 1930s, when the Sunnyvale Naval Air Station opened. Other businesses and industries that supported the military presence soon followed. Over time, military-related business was partially supplanted by the electronics industry, which led to the rise of Silicon Valley (Hill 2002).

Project Site History

The project site has been used by a number of occupants since the late 19th Century, with development focusing on four distinct themes: private use, the institutional care of the mentally ill, the Women's Relief Corps, and activities of the University of California Agricultural Extension. Each of these developments is discussed below. Several of these uses ran concurrently, as the 18-acre property was internally subdivided over time. A timeline of historic property use is located in Table 4.11-1, located at the end of the sections that follow describing the various uses.

Private Use

From 1870–1908 (Appendix L), the property passed through a succession of private owners. The parcel size stays the same throughout the earliest transfers, at approximately 80 acres until 1875 when 18 acres, the project site, became a separate parcel. Later, for 2 years (1887–1887) it joins a much larger property, owned by Henry Titus, but is then reduced back down to the 18-acre Osborne parcel. There is a paucity of information regarding the property during this time period, but an examination of the names of the owners does not reveal anyone who had any suggested connections with the known history of the project area, described below.

California Home for the Care and Training of Feeble-minded Children

Provision of child mental health services was associated with what was known as the "child guidance" movement. This development followed pioneering psychiatric studies oriented toward children by American psychologists toward the end of the 19th Century. These early studies were initially conducted in conjunction with the development of the first juvenile courts and the concept of preventative intervention. Before long, clinics dedicated solely to the study of child behavior were established (Deutsch 1937:323-324). One of the first clinics to undertake the psychological study of children was the Juvenile Psychopathic Institute, which opened in 1909 in connection with the juvenile court in Chicago, Illinois. This institution began as a five-year experiment, with the understanding that if the project proved successful, the institute would be taken over by the public. Before the end of the experiment in Chicago, two similar clinics were established – one in Boston and another in Baltimore. By the early 20th century, social service had become highly integrated into the psychiatric study and treatment of child behavior (Deutsch 1937:324).

Very early examples of the concern for childhood mental health were seen in Santa Clara County. In 1883, Julia Judah and Frances Bentley formed the California Association for the Care and Training of Feeble Minded Children to "provide and maintain a school and asylum for the feeble-minded, in which they may be trained to usefulness" (Department of

Developmental Services 2004). The first facility opened in Vallejo in 1884, with care for 20 patients directed by Superintendent B.T. Wood (Foote 1888). In 1885 there was a State appropriation that led to the construction of the California Home for the Care and Training of Feeble-minded Children (California Home) in 1886 on a 51-acre parcel in the town of Santa Clara. No exact location for this 51-acre parcel was identified during archival research as the research was focused on the project locality and its immediate environs rather than the larger Santa Clara town boundaries. There was no indication that the 18-acre Santa Clara Gardens property was contained within the larger 51 acres. An undated parcel map of Santa Clara County that appears to be from the approximate time period concerned here was examined in an attempt to locate the 51-acre parcel; however, large portions of the map were faded and illegible and the site could not be identified. James Reed, archivist at The History of San Jose's Archives and Museum stated that he knew of no other maps of that place and time which might be of value in this research. The property owner for the mental facility would have been the State of California; as can be seen in Appendix L and Table 4.11-1 below, the State of California did not obtain a title to any portions of the project site until 1921.

The new (as of 1886) superintendent of the California Home, Dr. A.E. Osborne, was a noted researcher in the field of working with disabled children (Foote 1888; Sawyer 1922). Dr. Osborne was from Pennsylvania, where he began his practice in 1879. He specialized in nervous and mental disorders in association with the Pennsylvania Training School for the Feeble-Minded. During Osborne's tenure, the facility grew rapidly**.** It was reported that there were 110 children in treatment, with another 150 on a waiting list for the California Home by 1888 (Foote 1888). Both Osborne himself and the California Home were listed in the San Jose and Santa Clara County Polk-Husted Directory (City Directory) for 1889-1890 (the directories were examined for the area beginning in 1885). Unfortunately, no addresses were given for either. Therefore, their locations could not be confirmed by this source. At about the same time (1888), the Agnews asylum for the "chronic insane" opened in the town of Agnews (Garcia 2003), located several miles to the north of the project site on property the State acquired in 1885; it was also listed in the Polk-Husted directory of the time. Agnews was a larger and more prominent home for the mentally ill that was one of the first to focus on treatment of mental problems rather than just confinement of the patients (Garcia 2003).

The rising population at Osborne's facility quickly led to the need for more space. In 1890, the State purchased land in Sonoma County and began construction of the new facility in that same year, relocating the Santa Clara patients to Sonoma County in 1891. Osborne went to Sonoma in 1891 as Superintendent of the facility. He was replaced by Dr. W.M. Lawlor in 1901 (asserted in McCray 2005). No record was found of Dr. Osborne's association with the California Home after 1901.

Property deeds (Appendix L) indicate that Osborne purchased the 18-acre Santa Clara Gardens property in 1908. It is not until 1910 that Osborne reappears in the Santa Clara phone directory, this time as: Osborne, Antrim E., propr. Osborne's Sanitarium on Los Gatos Rd [later Winchester] near Stevens Creek Rd, the location of the current project site. Osborne's Sanitarium was also referred to locally as Osborne Hall.

Osborne was listed in the City Directory as a physician until 1916. He was elected to the State Senate in 1920 (Sawyer 1922) where he served on a number of committees connected to conservation, public health, and related fields. From 1921–1924, the Osbornes sold parcels of the project site property to the State of California (Appendix L), until the entire 18 acres had been turned over to the State. It is unknown, but presumed, that the state used at least some of the extant structures still standing at the time of the sale.

See the following sections (Women's Relief Corps Home, University of California Agricultural Extension) for property uses between 1924 and 1952. During that period, the property was internally divided, with continued use of approximately five acres (Appendix L; United States Geological Survey 1961) in the central and southeastern portion of the project site for the Women's Relief Corps Home and, later, the Holderman Sanitarium (see below). A conversation with Eugene Speck, former Associate Director of the Agricultural Extension station at BAREC (pers. comm. 2006) confirms that the Women's Relief Corps home was located near the southeastern portion of the project site.

Women's Relief Corps Home

In 1866, Civil War veterans of the Union armed forces established the Grand Army of the Republic (GAR), an organization similar to today's Veterans of Foreign Wars or the American Legion. Founded and headed by prominent members of the military, enrollment peaked in 1890 with more than 400,000 members. The mission of the organization was to strengthen the bonds of comradeship, to provide aid to soldiers' widows and orphans, and to handicapped veterans, and most importantly to preserve the memory of their fallen comrades. The GAR was responsible for securing the adoption of both Flag and Memorial Day observances (http://www.suvcw.org/). Auxiliary societies associated with GAR included the Sons of Veterans (1881), the Women's Relief Corps (1883), and the Ladies of the Grand Army of the Republic (1886). The organization held its last encampment in 1949 and the last GAR member died in 1956.

To meet their mission, in the late 1880s (Sawyer 1922) the Women's Relief Corps built and operated a hospital for widows and families of veterans on five acres in the Evergreen area of San Jose on Cadwallader Road, several miles south of the project site. There were only three such facilities in the country at this time. On April 6, 1889, the cornerstone for the home was laid at the Evergreen site. That property was dedicated for use later that year on December 28. The facility housed women and children until October 10, 1920, when it burned to the ground. After the fire, the women and children were temporarily housed at Agnews, until fall of 1921 when they moved into Osborne Hall, on the project site. A series of appropriations by the State Senate and Assembly (Appendix L) allowed the Department of Veteran's Affairs to lease at least part of the project site to house the Women's Relief Corps nursing home as well as allotting financial support to the "inmates."

On June 11, 1947, the State Assembly, by a poll of 54 to 20, voted to close the Women's Relief Corps Home. Supervisor Joseph M. McKinnon had successfully stopped a similar proposed action in 1942. In spite of the attempts to close the facility, it continued to receive funding, with $39,500 included in Governor Goodwin J. Knight's 1956–57 state budget. In 1952, the

State deeded approximately 13 acres to the Regents of the University of California making that agency the owner of the UC Deciduous Fruit Field Station (see University of California Agricultural Extension below).

In 1954, the State leased the buildings, presumably those built for the Osborne Home, to Charles and Genevieve Holderman and the name of the facility was changed to the Holderman Sanitarium. Holderman's father, Colonel Nelson Holderman (winner of the Medal of Honor), was commandant of the California Veterans' Home in Yountville. The Holdermans gradually transferred their patients to newer facilities; in 1962, the only remaining resident, Eva Simpkins, was moved to a new facility and the remaining five acres of property were transferred to the University of California the next year (Appendix L).

University of California Agricultural Extension

The varied topography and precipitation in California provided a wide range of climates suitable to growing a variety of crops. Early farmers in California used these factors to create a market for themselves in the growing population led by the influx for the Gold Rush. Other factors, including Statehood, railroad development (bringing Americans westward), the timber industry, other mining etc. each contributed to the need for increased agriculture. Near the end of the 19th century new approaches to farming were being studied in Europe and one or two places in the eastern United States. These studies were based on controlled experimentation and laboratory work. The newly established University of California, with its statewide network of Agricultural Experiment Stations, picked up on the emerging agricultural sciences. The stations made immediate and pertinent practical applications and agricultural advances, most notably in strawberry breeding programs begun in the early 1900s. These breeding programs produced many successful varieties that were shipped all over the nation (Darrow ca. 1965).

Farming in California typically consisted of large farms devoted to a single crop. Because these farms could go bankrupt with a single crop failure, advanced farming methods and newly-developed agricultural knowledge was used to help ensure their success. Intricate irrigation systems, precisely engineered fields, and the use of soils science were methods used on many California farms. Much of the research undertaken in California found application throughout the world (Wells 1969:6).

The Santa Clara County Deciduous Fruit Station, part of the University of California Agricultural Extension, opened in 1920, and moved to the project site in 1928, when 13 acres of land surrounding the Woman's Relief Corps Home were leased from the State. The agricultural extension was established to investigate problems related to the growth and care of deciduous fruits in the central counties. Buildings were added in the 1920s, including the still-standing lab/office building and a nearby shed. Additional buildings were constructed after World War II and greenhouses and a potting shed were added in the early 1970s. Work conducted at the Deciduous Fruit Station included development of several varieties of strawberries (Speck, pers. com.). Studies for the selection of varieties of garlic, soybeans, drought resistant grass, and other landscape and vegetable crops were also conducted at the site.

Research at the Agricultural Station has focused on agricultural systems and plant varieties that require less water. In particular, a variety of drought-resistant turf grass was developed at the station by Dr. Ali Harwandi. Several plots of this turf remain on the property. Tree varieties were also studied to select varieties that did not damage city sidewalks and streets. Compost and vermiculture studies were conducted to develop methods to greatly reduce watering needs in urban landscapes and small gardens. In an effort to help reduce smog in the Santa Clara Valley, agricultural waste disposal methods including chipping and grinding were developed at the project site to replace more traditional burning that had been the standard practice used by valley farmers. There was a move to close the Agricultural Station in 1950; however it stayed in operation until it was officially closed on January 1, 2002.

Table 4-22
Timeline of Historic Property Use at the Santa Clara Gardens Site

Date	Events
1870	Project site transfers from U.S.A. (Patent) to the Heirs of Isaac Owen
1872	Lucinda and Amy Owen transfer part of the property to Sarah F. Kidder
1875	William Mc K Owen transfer the remaining property to Sarah F. Kidder
1875	Charles and Sarah Kidder transfer the property to James B. Yeargain (±18 acres)
1875	Yeargain transfers the property to H.H. Warburton (±18 acres)
1887	Warburton transfers the property to Henry W. Titus (part of a larger plot, ±115 acres)
1889	Titus transfers the property to Nicholas DeBar (±18 acres)
1907	The property is foreclosed and transferred to J.J. Sontheimer (±18 acres)
1908	J.J. and Anna Southeimer transfer the 18 acres to Margaret Osborne
1910	Osborne Sanitarium appears in local phone directory
1921	Women's Relief Corps moves to the property
1921	State acquires 8 acres of the project site from the Osbornes
1924	State acquires the remaining 10 acres of the project site from the Osbornes
1928	UC Deciduous Fruit Field Station begins operating at the project site (13 acres)
1928	The laboratory/office building and the shop building were constructed
1947	State Assembly closes the Women's Relief Corps home to future applicants (remains operational for existing patients
1951	Veteran's Bureau of California takes over operation of the Women's Relief Corps home
1952	State transfers 13 acres of the property to the Regents of the University of California, who continue operating the Field Station
1954	The 5 acres not in use by the Field Station is leased to Charles and Genevieve Holderman. The name of the facility onsite is changed to the Holderman Sanitarium
c.1960	Construction begins on the existing structures at the site, including sheds and greenhouses
1960s	Research focus shifts from deciduous fruit to ornamental crops
1963	State of California transfers remaining 5 acres to the University of California
1963	Women's Relief Corps, Holderman Sanitarium buildings demolished

Table 4-22 Timeline of Historic Property Use at the Santa Clara Gardens Site	
Date	Events
1980s	Research focus shifted to needs of the homeowner
1995	Field Stations became Research and Extension Centers. Name changed to the Bay Area Research and Extension Center (BAREC)
2002	BAREC facility closed
Table compiled by EDAW 2006.	

REGULATORY SETTING

City of Santa Clara General Plan

The City's General Plan includes an ongoing program for cultural resources management within the City. The Planning Department is responsible for implementation of this program, and is monitored on a yearly basis by the City of Santa Clara Planning Commission for compliance with federal and state requirements.

Elements of the City's archaeology program require that the City:

- Continue to require archeological investigations of all proposed construction sites in sensitive areas, such as within 500 feet of a natural watercourse. An archaeological survey shall be prepared by the project applicant to the city's satisfaction, including limited subsurface excavation, and possibly to include a detailed subsurface investigation when important resources cannot be avoided.

- Continue to require prior to development, whenever archeological remains are found, a plan for preserving, removing, and recording the find, to be prepared to the City's satisfaction by a professional archeologist (City of Santa Clara 1998).

The City Council adopted Criteria for Local Significance on April 8, 2004 (Appendix L), which outlines the criteria for determining the significance of historic resources within the City. These criteria include evaluating resources for the historic, cultural, architectural, geographic, and archaeological significance.

State CEQA Guidelines

CEQA offers guidelines regarding impacts to historical and archaeological resources. CEQA states that if implementation of a project would result in significant impacts on important cultural resources, then alternative plans or mitigation measures must be considered. However, only significant cultural resources need to be addressed. A significant historical resource is defined as "a resource listed or eligible for listing on the California Register of Historical Resources" (CRHR) (Public Resources Code Section 5024.1). A historical resource may be eligible for inclusion on the CRHR if it:

1) Is associated with events that have made a significant contribution to the broad patterns of California's history and cultural heritage; or

2) Is associated with the lives of persons important in our past; or

3) Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or

4) Has yielded, or may be likely to yield, information important in prehistory or history.

Sites must also be evaluated for their integrity under CCR Section 4852(c), which states:

- Integrity is the authenticity of an historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance.

Section 15064.5(a)(2) states that historic resources include resources included in a local register of historical resources, as defined in Section 5020.1(k) of the PRC, or identified as significant in an historical resource survey meeting the requirements of Section 5024.1(g) of the PRC shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

Section 15064.5(e) of the State CEQA Guidelines requires that excavation activities stop whenever human remains are uncovered and that the county coroner be called to assess the remains. If the county coroner determines that the remains are those of Native Americans, the Native American Heritage Commission must be contacted within 24 hours. At that time, State CEQA Guidelines Section 15064.5(d) directs the lead agency to consult with the appropriate Native Americans as identified by the Native American Heritage Commission and directs the lead agency (or applicant) to develop an agreement with the Native Americans for the treatment and disposition of the remains.

In addition, the State CEQA Guidelines Section 15064.5 requires consideration of unique archaeological sites. If an archaeological site does not meet the criteria for inclusion on the CRHR but does meet the definition of a unique archeological resource as outlined in the Public Resource Code Section 21083.2, it may be treated as a significant historical resource. Resources that are eligible for listing on the CRHR include sites that are the location of a significant event, or a building or historical structure. These sites do not need to be marked by physical remains. Eligible sites could include trails, landscapes, battlefields, or habitation sites (CCR 14, Chapter 11.5, Section 4852[a][2]). Cultural resources locations may also be considered for eligibility as California Historical Landmarks or California Points of Historical Interest (PRC Section 5022.5). Criteria to evaluate resources for these listings may be found on the Office of Historic Preservation website (http://ohp.parks.ca.gov).

Under CEQA, landscape evaluations are guided by National Register Bulletin 30, Guidelines for Evaluating and Documenting Rural Historic Landscapes (1999), National Register Bulletin

18, How to Evaluate and Nominate Designed Historic Landscapes, the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for the Treatment of Cultural Landscapes (1992), and the CRHR eligibility criteria (Public Resources Code 5024.1 (c)). These guidelines and regulations, along with the developed eligibility considerations provided below, provided a framework with which to gauge the BAREC property's potential significance as a historic landscape.

Historic Landscape Eligibility

Rural Historic Landscapes

For the purposes of the National Register, a rural historic landscape is defined as a geographical area that historically has been used by people, or shaped or modified by human activity, occupancy, or intervention, and that possesses a significant concentration, linkage, or continuity of areas of land use, vegetation, buildings and structures, roads and waterways, and natural features. Rural landscapes commonly reflect the day-to-day occupational activities of people engaged in traditional work such as mining, fishing, and various types of agriculture. Often, they have developed and evolved in response to both the forces of nature and the pragmatic need to make a living. Landscapes small in size and having no buildings or structures, such as an experimental orchard, are classified as sites. Most, however, being extensive in acreage and containing a number of buildings, sites, and structures--such as a ranch or farming community--are classified as historic districts. Large acreage and a proportionately small number of buildings and structures differentiate rural historic landscapes from other kinds of historic properties.

Distinct from designed landscapes, rural landscapes usually are not the work of a professional designer and have not been developed according to academic or professional design standards, theories, or philosophies of landscape architecture. These properties possess tangible features, called landscape characteristics, that have resulted from historic human use. In this way, they also differ from natural areas that embody important cultural values but have experienced little modification, such as sites having religious meaning for Native American groups.

National Park Service Preservation Brief # 36 defines a vernacular (rural) historic landscape a landscape that evolved through use by the people whose activities or occupancy shaped that landscape. Through social or cultural attitudes of an individual, family or a community, the landscape reflects the physical, biological, and cultural character of those every day lives. Function plays a significant role in vernacular landscapes. They can be a single property such as a farm or a collection of properties such as a district of historic farms along a river valley. Examples include rural villages, industrial complexes, and agricultural landscapes.

The Santa Clara Gardens project site does not appear to meet the criteria of a rural historic landscape. The site has been completely modified, as opposed to more minor changes that preserve the essentially rural character of the area.

Designed Historic Landscapes

For the purposes of the National Register, a designed historic landscape is defined as any of the following:

- a landscape that has significance as a design or work of art;
- a landscape consciously designed and laid out by a master gardener, landscape architect, architect, or horticulturalist to a design principle, or an owner or other amateur using a recognized style or tradition in response or reaction to a recognized style or tradition;
- a landscape having a historical association with a significant person, trend, event, etc. in
- landscape gardening or landscape architecture; or
- a landscape having a significant relationship to the theory or practice of landscape architecture.

In many instances, the original design intent of a significant designed historic landscape was to complement an adjacent building or buildings. In such cases the research needs to address the significance of both the architecture and the designed historic landscape and their interrelationship. Examples of interrelated historic architecture and designed historic landscapes, such as a courthouse and courthouse square, should not be artificially separated but evaluated as a unit.

National Park Service Preservation Brief # 36 defines a designed historic landscape as a landscape that was consciously designed or laid out by a landscape architect, master gardener, architect, or horticulturist according to design principles, or an amateur gardener working in a recognized style or tradition. The landscape may be associated with a significant person(s),trend, or event in landscape architecture; or illustrate an important development in the theory and practice of landscape architecture. Aesthetic values play a significant role in designed landscapes. Examples include parks, campuses, and estates.

Many historic landscapes are significant because they represent such themes as early settlement, immigration, or agriculture; yet unless they meet the above definition, they are not considered designed historic landscapes. This definition of designed historic landscape does not include such landscapes as ethnic communities or farmsteads that may be historic but that developed for the most part without benefit of professional planning or design; that were not consciously designed as works of art; or that represent the work of distinct cultural groups and are more properly classified as cultural or vernacular landscapes.

Beyond the application of the criteria above, a resource must retain sufficient integrity from its period of significance to be considered eligible for listing. Because of the importance of land, natural features, and vegetation, the seven qualities of integrity (location, design, setting, workmanship, materials, feeling, and association) are often applied differently to landscapes. This relationship, involving land patterns of spatial organization, circulation networks, and

clusters, is influenced by the cohesiveness of the landscape. Integrity of setting and design, for example, are associated with boundary demarcations, small-scale elements, and vegetation. The final decision about integrity is based on the condition of the overall property and its ability to convey its historically significant appearance. In assessing the overall integrity, it is necessary to consider the nature, extent, and impact of changes made to the property since the period of significance. For example, the repeated loss of buildings and small-scale features over time may result in the cumulative loss of integrity.

Examination of the two types of landscape discussed above clearly indicates that the Santa Clara Gardens site could only be considered as a designed landscape. However it also fails to meet these criteria. There is no attempt to design permanent features, rather the agricultural extension history is one of continuing change and rotation of plantings with no particular attempt to relate the architecture and plantings, no style of design, and no intent to leave more permanent plantings.

California Historical Landmark

California Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. The specific standards now in use were first applied in the designation of Landmark # 770, a Chinese temple in Oroville. California Historical Landmarks #770 and above are automatically listed in the California Register of Historical Resources.

To be designated as a California Historical Landmark, a resource must meet at least one of the criteria listed below; have the approval of the chairperson of the County Board of Supervisors or the City/Town Council in whose jurisdiction it is located; be recommended by the State Historical Resources Commission; and be officially designated by the Director of California State Parks.

Criteria for Designation

To be eligible for designation as a Landmark, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type in the state or within a large geographic region (Northern, Central, or Southern California).
- Associated with an individual or group having a profound influence on the history of California.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in a region of a pioneer architect, designer or master builder.

California Point of Historical Interest

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value. Points of Historical Interest designated after December 1997 and recommended by the State Historical Resources Commission are also listed in the California Register.

Criteria for Designation

To be eligible for designation as a Point of Historical Interest, a resource must meet at least one of the following criteria:

- The first, last, only, or most significant of its type in the state or within the local geographic region (City or County).
- Associated with an individual or group having a profound influence on the history of the local area.
- A prototype of, or an outstanding example of, a period, style, architectural movement or construction or is one of the more notable works or the best surviving work in the local region of a pioneer architect, designer or master builder.

METHODOLOGY

The following analysis is based upon the previous reports by Holman and Associates (2002) and Hill (2002) as well as the EDAW background research and site visit. The information collected during these various efforts was then used to assess the property's eligibility to the CRHR as a landscape resource, a historical landmark, and a point of interest.

Known Cultural Resources in the Project Area

No prehistoric sites have been identified in the project area (Holman 2002). There are ten extant structures on the project site. Of the ten structures, only the lab/office building and the shop are over 50 years old. Neither of these buildings has been substantially altered, thus they appear to retain a high degree of historic integrity (Hill 2002). Other historic-era resources, such as remnants of landscape features and some structural remains associated with the charitable organizations and the agricultural research activities described above are present. Resources on the property include buildings from the Agricultural Extension period, a plum tree which may have been planted in the 1940s, a Chinese pistachio tree, an avocado tree, and a sidewalk section from the Women's Relief Corps home/sanitarium located adjacent to the project site. Subsurface foundations, privies, cisterns, or other features relating to the earlier uses of the property may also exist.

EDAW Site Visit

An EDAW architectural historian and botanist visited the project site on December 13, 2005 to gather information about the site's characteristics and existing condition. The site was examined from various perspectives for project-area overviews, as well as specific physical features. A large portion of the field visit was directed at determining the extent to which historic properties remain intact. The EDAW team noted buildings, structures, plantings, circulation systems, spatial organization, and any other feature which might contribute to an understanding of the site as a whole. Photographs were taken using both digital and 35 mm cameras. Global Positioning System units, aerial photographs, and topographic quadrangles were also used for reference during the field investigation.

The plantings onsite were examined by EDAW botanist Ellen Dean. She observed three maples (*Acer* sp.) no more than 20 years in age, and boxleaf hebe (*Hebe buxifolia*), shrubs which have been popular plantings in the Bay Area since the 1960s, were planted around the old office/ laboratory. Also present are red valerian (*Centranthus rubber*), Siberian elm (*Ulmus pumila*), ivy (*Hedera helix*), and geranium (*Pelargonium* sp.), all common varieties of horticultural plants widely planted in the Bay Area. Throughout the site there is a good deal of wavyleaf sealavender (*Limonium sinuatum*), presumably escaped from a horticultural trial done within the last 40 years.

Fields where turf-grass trials took place are present, however these fields are now fallow. Several varieties of fruit trees were seen onsite including a pineapple guava (*Feijoa sellowiana*). Although this is an older tree (c. 1940–1950), there is nothing significant about the variety according to Nancy Garrison, Santa Clara County Cooperative Extension Specialist, Retired (pers. comm. 2005). There are also remains of rose-family fruit tree varietal plantings (apricot, cherry, prune plum and French plum) which likely date to the 1940s. According to Clyde Elmore, former BAREC employee and UC Davis Cooperative Extension Weed/Horticulture Specialist, Retired, most of these plantings were removed over the years (pers. comm. 2005). Several of the remaining trees are in poor condition because they have not been maintained since the Agricultural Extension left the property. Other plantings onsite include a small vineyard dating to within the last 30 years, a row of walnuts (1960s), bamboo (1980s), crabapple trees (1980s), and a large rounded pine (1970s).

A grove of very large Brazilian pepper trees (*Schinus terebinthifolius*) and Chinese pistache (*Pistacia chinensis)*, possibly planted for a street tree trial, are also onsite. According to Garrison, these trees are approximately 30 years old. A large avocado (*Persea Americana*) tree, approximately 40 feet tall, which produces a smooth-skinned variety, is considered potentially significant in that the specific variety has yet to be identified according to Garrison. This tree likely dates to the 1940s. It was asserted during the public comment process that there is a plum tree on the property that was thought to be one of the oldest plantings remaining onsite and which was used to propagate plum trees throughout the Santa Clara Valley; however the tree appears to have been planted in the 1940s, at approximately the same time when other plum trees were planted onsite and during a period when the region was becoming more

urban and beginning to lose it's rural character. This tree is currently in poor condition (based on observations by an EDAW botanist). The locations of plantings on the property are depicted in Exhibit 4-16.

Historic Landscape Eligibility Assessment

The Santa Clara Gardens site does not appear to meet the criteria for consideration as an historic landscape. Furthermore, the research conducted as part of the historic landscape assessment of the property led to the determination that the site lacks sufficient integrity to be considered eligible for listing in association with the property's earliest history; that is, private ownership and use until 1908, Osborne Hall until the early 1920s, and the Women's Relief Corps beginning in 1921.

Research indicates that Dr. A.E. Osborne was a Superintendent of the California Home for the Care and Training of Feeble-Minded Children, however that facility was located elsewhere. Osborne's private sanitarium was not established on the project site until approximately 1910. Although links exist between the property and individuals (Dr. Osborne) and institutions (Osborne Hall / Women's Relief Corps) that may have played an important role in local history can be made through the historical record (Criteria 1 and 2 of the CEQA eligibility requirements), the site, in its current condition and configuration, does not reflect that association because the property does not retain the physical evidence of that time period which is necessary to convey an association with those facilities. The buildings on the property utilized by Osborne's facility and the Women's Relief Corps were demolished in the 1960s (Hill 2002; McCray 2005). The remnant of a possibly historic sidewalk, noted within one secondary source (asserted in McCray 2005), was observed by the study team as currently being adjacent to and within the site boundaries abutting the Veteran's building south of the property (Exhibit 4-16). Even if this sidewalk remnant is associated with Dr. Osborne's facility, it is only a fragment of a once-larger structure and has at least partially been covered by later pavement.

The only possible consideration for an eligible historic landscape lies with the project site's use as the agricultural research station. In this regard, several factors were considered, including the retention of original characteristics during the time UC began using the property beginning in 1928. A property is generally not considered to be a possible historic resource until it is over 50 years old. Using this criteria, the potential period of significance of the agricultural research station is 1928 to 1955. This 50-year mark designates the standard minimum age for the consideration of historic properties. Preservation standards that generally look at 50 years as having adequate time for evaluation and consideration of whether they are historically significant.

The majority of the existing buildings on site were constructed in the 1960s and 1970s, and therefore post-date the 50 year mark. The two buildings on the property that date to UC's early presence on the site (1928), were previously evaluated and determined ineligible for the CRHR due to their lack of distinctive architectural characteristics (Criterion 3), and the facility having been " one of the smaller research stations in the University system….conducting research typical of other stations" (Hill 2002). It was determined by Hill, in consultation with

Source: City of Santa Clara 2001

Project Vicinity

EXHIBIT 4-16

Santa Clara Gardens Development Project Draft EIR

0 150 300
FEET

NORTH

EDAW

X 3T008.01 3/06

agricultural historian Ann Scheuring, that the BAREC station did not play an important role in California and regional agriculture. It is therefore unlikely that the property has the potential to yield significant scientific or historical information (Criterion 4).

Similar property types within California predate the BAREC facility, and are considered to have played greater roles within the context of agricultural extension centers. The Regents of the University of California at Berkeley, for example, formally established an Agricultural Experiment Station of 40 acres in 1872, and founded a station on the campus in 1912. The Berkeley station, aside from being the first in the state of California, is known for its early collection and study of exotic botanical plant specimens. That particular station is one component of an overall designed historic landscape on the campus (UC Berkeley 2004). In terms of the established eligibility considerations, this indicates that the BAREC property is not the oldest or best representation of its kind.

Research conducted in conjunction with the onsite vegetation indicates that the property was once more heavily planted, and that the existing varieties are common to the area. The avocado tree may be of interest; however the property as a whole lacks significance within the agricultural extension center context. As was previously mentioned, the BAREC facility is considered to have been one of the smaller extension centers, conducting research typical to that being conducted at many other centers. The BAREC facility does not appear to have played an important role in the state's agricultural development, and therefore does not appear to meet the criteria for eligibility to the CRHR as a historic landscape.

California Historical Landmark Assessment

California Historical Landmarks are sites, buildings, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value.

As discussed above, the project site does not fulfill the eligibility criteria above. The earliest Home for Feeble-minded Children was located in Vallejo and only moved to Santa Clara in 1886; there is no evidence that this early incarnation was located at the Santa Clara Gardens site. The subsequent Osborne Sanitarium, not established until 1908, was a private sanitarium with no particular distinctions other than the association with Osborne himself. While Osborne apparently distinguished himself during his stint as Superintendent of the Home for Feeble-minded Children, that was on the 51-acre parcel elsewhere in Santa Clara and then in Sonoma County. The Women's Relief Corps use of the property is well documented; however it was not the only one of its kind and left no surviving architecture. The oldest remaining structures (the 1928 office/lab and shed) have been evaluated separately (Hill 2002) and were not found to be significant examples of the architecture of the period.

California Point of Historical Interest Assessment

California Points of Historical Interest are sites, buildings, features, or events that are of local (city or county) significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other value.

These are the same criteria as for a California Historical Landmark except for the change in emphasis to a smaller geographic region. For the reasons enumerated above, the project site does not fulfill the eligibility criteria to be considered as a California Point of Historical Interest.

4.11.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in a significant impact to cultural resources if it would:

- cause a substantial adverse change in the significance of a historical resource as defined in Section 21083.2 of CEQA or a unique archaeological resource as defined in Section 15064.5 of the State CEQA Guidelines, or
- disturb any human remains, including those interred outside of formal cemeteries.

IMPACT ANALYSIS

Impact 4.11-1

Impacts to Known Prehistoric Cultural Resources. *No prehistoric cultural resources are known to occur on the project site or in the project area. Therefore, this would be a less-than-significant impact.*

Based on the records search and project site survey, there are no known prehistoric cultural resources on the project site or in the nearby project vicinity. As a result, the project or the development option would not disturb or destroy any known prehistoric cultural resources. This would be a less-than-significant impact.

Impact 4.11-2

Impacts to Historic Resources. *Evidence indicates that individual structures and features on the site are not eligible for listing on the California Register of Historical Resources (CRHR). Although there are documented past developments and uses of the property, there are no physical remnants of the earliest uses. The structures that do remain do not meet the CEQA definition of historical resources. Therefore, changes to these resources would be a less-than-significant impact.*

A number of past uses related to historic-era uses of the site have been noted in the project area, including the Osborne Sanitarium, the Women's Relief Corps Home, and the University of California Agricultural Extension. The collective uses (i.e., research activities, care facilities, women's relief corps.) and history of the property, while interesting, do not have any potential historical significance as a cultural landscape or geographic area based on the importance of past uses. None of these uses meet the criteria for significance that would render the property

eligible for listing to the CRHR or identification as a California Historical Landmark or a California Point of Historical Interest. As described in the Methodology section, although links exist between the property and individuals (Dr. Osborne) and institutions (Osborne Hall/ Women's Relief Corps) that may have played an important role in local history can be made through the historical record, the site, in its current configuration, does not reflect that association because the property does not retain the physical evidence of that time period which is necessary to convey an association with those facilities. Further, similar property types within California predate the BAREC facility, and are considered to have played greater roles within the context of agricultural extension centers (e.g., UC Berkeley) and indicated that the BAREC property is not the oldest or best representation of its kind. Extensive research also indicated that the BAREC facility did not play an important role in the state's agricultural development, and would not meet the criteria for eligibility to the CRHR as a historic landscape. Any structures related to the Osborne Sanitarium or the Women's Relief Corps Home have been razed. Two older structures related to the agricultural station have been separately evaluated, as well as examined in combination with the experimental plantings that remain in order to determine whether this use of the property could be viewed as a rural historic landscape. The experimental agriculture practiced at the BAREC facility means that plantings were regularly replaced over time, leaving little that might be associated with the two 1928 structures. Existing buildings on the project site were determined to be ineligible for the CRHR due to their lack of distinctive architectural characteristics, and the BAREC facility having been one of the smaller and younger research stations in the University system. The three oldest-appearing trees, the avocado, Chinese pistachio, and plum tree do not hold any particular significance other than perhaps being planted approximately 60 years ago (i.e., in the 1940s). The project site or its features would not be eligible for listing as a California Historical Landmark or Point of Historical Interest because it does not meet CRHR eligibility criteria (described above). As a result, the project would not disturb or destroy any known significant cultural resources. This would be a less-than-significant impact.

Impact 4.11-3

Impacts to Previously Undiscovered Cultural Resources. *Development of the site may disturb previously undiscovered or unrecorded archaeological sites. Disturbance of these resources would be a potentially significant impact.*

No archaeological resources are known to occur on the project site or in the nearby project area. However, there may be unidentified archaeological resources related to the historic use of the property that would be uncovered during grading and construction operations. These might include privies, wells, or remnant landscape features. Disturbance of these resources would be a potentially significant impact.

Impact 4.11-4

Disturbance of Previously Undiscovered Human Remains. *The project or development option could disturb previously undiscovered human remains. This would be a potentially significant impact.*

No human remains are known to occur on the project site. However, it is possible that unidentified archaeological resources, including human remains, may be uncovered during

grading and construction operations. Disturbance of these resources would be a potentially significant impact.

4.11.3 MITIGATION MEASURES

No mitigation is necessary for the following less-than-significant impacts.

4.11-1: Impacts to Known Prehistoric Cultural Resources.

4.11-2: Impacts to Historic Resources.

Mitigation is recommended for the following potentially significant impacts.

4.11-3: Impacts to Previously Undiscovered Cultural Resources. In the event any archaeological resources are discovered during site earthwork activities, all earthwork activities in the vicinity of the find shall halt and the applicant shall retain the services of a qualified archaeologist to evaluate the resources found onsite. The archeologist shall document their provenience and nature (through drawings, photographs, written description, etc., as necessary). The monitor will then direct the work to either proceed if the find is deemed to be insignificant or is adequately documented and resolved, or continue elsewhere, as appropriate, until adequate mitigation measures are adopted or the matter is otherwise resolved to the satisfaction of the City.

Once a find has been made and deemed to be significant, the archaeologist will then submit a Treatment Plan (if one was not previously approved) to the City. The key elements of a treatment plan shall include the following:

a) Identify scope of work and range of subsurface effects (include location map and development plan).

b) Describe the environmental setting (past and present) and the historic prehistoric background of the parcel (potential range of what might be found).

c) Develop research questions and goals to be addressed by the investigation (what is significant vs. what is redundant information).

d) Detail field strategy used to record, recover, or avoid the finds (photos, drawings, written records, provenience data maps, soil profiles, excavation techniques, standard archaeological methods) and address research goals.

e) Analytical methods (radiocarbon dating, obsidian studies, bone studies, historic artifact studies [list categories and methods], packaging methods for artifacts, etc.).

f) Report structure, including a technical and layman's report and an outline of document contents in one year of completion of development (provide a draft for review before a final report).

g) Disposition of the artifacts.

h) Appendices: site records, update site records, correspondence, consultation with Native Americans, etc. The need for a burial agreement plan for Native American burials can be incorporated into Treatment Plan but must be done in consultation with MLD. Plan should detail goals, methods, and disposition of remains and associated artifacts.

4.11-4: Disturbance of Previously Undiscovered Human Remains. If human remains are encountered during project construction, the requirements of California Health and Safety Code Section 7050.5 and Section 7052 and California Public Resources Code Section5097 will be met. The California Health and Safety Code requires that if human remains are found in any location other than a dedicated cemetery, excavation is to be halted in the immediate area, and the county coroner is to be notified to determine the nature of the remains. The coroner is required to examine all discoveries of human remains within 48 hours of receiving notice of a discovery on private or state lands (Health and Safety Code Section 7050.5[b]). If the coroner determines that the remains are those of a Native American interment, then the Native American Heritage Commission shall be consulted to identify the most likely descendants and the appropriate disposition of the remains.

4.11.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

After implementation of the above mitigation measures, the impacts to previously undiscovered cultural resources (Impact 4.11-3), and human remains (Impact 4.11-4) would be less than significant.

4.12 POPULATION/HOUSING

The purpose of this section is to determine the project's impact on population and housing demands in the local area. This chapter is based on population and housing projections provided by the City of Santa Clara, the Association of Bay Area Governments (ABAG), and the California Department of Finance.

4.12.1 ENVIRONMENTAL SETTING

POPULATION

The 2000 Census reported a population of 102,361 persons in the City of Santa Clara (U.S. Census Bureau 2003). Projections developed by ABAG indicate that the City's population would be approximately 115,700 by 2010 and 134,000 by 2025 (ABAG 2002). This would be an approximate 24% increase in the City's population over the course of 25 years. The City's senior adult population (age 65 and older) in 2000 was approximately 10,900 (City of Santa Clara 2002). Santa Clara County's senior adult population is projected to increase by a 43% by 2025 (ABAG 2002). Although no projections are available for the City, it is likely that the senior adult population would see increases of 30 to 40% consistent with national averages.

HOUSING

The City of Santa Clara housing mix in 2000 consisted of (Santa Clara County 2002b):

- 17,633 single-family detached units (44.5% of the City's housing),
- 3,585 single-family attached units (9.1% of the City's housing), and
- 18,384 multiple family or other units (46.4% of the City's housing).

Housing costs in Santa Clara County are among the highest in the San Francisco Bay area, with a median value of $446,400 (U.S. Census Bureau 2003). The median housing price for a single-family home in the City of Santa Clara in July 1997 was $319,950 and increased to $561,350 by May 2001 (City of Santa Clara 2002). This was an increase of nearly 75% over a 4-year period. More than 60% of all housing units in the City are 30 years old or older—an age at which most units need major improvements or repairs (City of Santa Clara 2002).

There are currently four below-market senior housing projects in the City, which provide 408 apartment units (City of Santa Clara 2002). Senior housing facilities in the City consistently maintain long waiting lists with wait times up to 2 years. The City has recently approved and/or built three new senior housing developments: an 80-unit assisted living complex planned on Pacific Drive, a 100-unit public housing development targeting very low income seniors as part of the overall Agnews Rivermark development, and a 42-unit affordable senior development on El Camino Real. These developments received funding assistance from the City's Redevelopment Agency.

REGULATORY BACKGROUND

Housing Element

In August 2002, the State of California Housing Policy Division, Housing and Community Development Department, certified the Housing Element Update for the City of Santa Clara. The Housing Element describes the City's vision and strategy for affordable and market rate housing over an 8-year planning period (horizon year is 2010).

The City's Housing Element provides an analysis of housing development potential and constraints. In the Housing Element, 72 sites are identified as being vacant or underutilized in their current capacity, and targeted by the City for residential development. The Santa Clara Gardens property was excluded from this list, but the City Council did approve a footnote to the table that states:

> Santa Clara Gardens Boulevard is also designated for moderate density residential development. It is omitted from this table in anticipation of more detailed planning by the City in the near future. Its omission should not prejudice future land use decisions by the City, which considers this site an important opportunity for housing (City of Santa Clara 2002).

The City recognizes the need to rehabilitate existing housing and construct new housing to accommodate future population projections for the City. Less than 3% (313 acres) of land in the City is undeveloped and/or vacant, of which approximately 50% (154 acres) are identified for residential development. This acreage could accommodate a total of 4,105 units based on anticipated allowed densities (City of Santa Clara 2002). ABAG projects that 5,544 housing units would need to be developed between 2002 and 2006 to accommodate growth in the City during that period (City of Santa Clara 2002).

Community opposition to residential infill development at higher densities than surrounding development has increased (City of Santa Clara 1992). In response, the City revised its zoning to require that proposed high-density, multi-family developments meet design standards that consider the developments compatibility with surrounding land uses. These standards generally require the developments to provide increased buffers and setbacks between the development and surrounding land uses.

Policies and programs of the Housing Element applicable to the project include:

- **Policy C.** Promote compatibility between neighborhood developments,
- **Policy E.** Encourage the annual construction of the number of housing units necessary to meet the City's regional housing needs determination through housing finance and reducing constraints on the private housing market,
- **Policy G.** Encourage the building of higher density housing on appropriate vacant or underutilized (infill) land, and

- **Program 25.** Support development of low income housing alternatives, such as Single Room Occupancy (SRO) units, Senior Housing, Family Housing, etc.

4.12.2 ENVIRONMENTAL IMPACTS

THRESHOLDS OF SIGNIFICANCE

The project would result in significant population and housing impacts if it would:

- induce substantial population growth above planned levels, either directly or indirectly; or
- displace substantial numbers of existing housing or substantial numbers of people, necessitating the construction of replacement housing elsewhere.

IMPACT ANALYSIS

Impact 4.12-1

Induce Substantial Population Growth Above Planned Levels. *The proposed project would not induce substantial population growth above what is planned for in the City's General Plan. This would be a less-than-significant impact.*

The project includes the development of 110 single-family residences and 165 senior housing units. Based on these densities and using the City's population generation rate of 2.58 persons per household (pph), the project would generate a maximum of 710 persons (110 units x 2.58 + 165 units x 2.58) (Chen, pers. comm., 2003). This would be a less than 1% increase in the City's population. However, the project would likely generate fewer people as the senior housing units would typically house only one person per unit (total of 449 persons).

The City's General Plan estimated that the population in the City would grow by approximately 31% over a 25-year planning period. This growth and its associated environmental effects were evaluated in the City's General Plan EIR (certified in 1992). Although the project would provide new housing in the City, the City is currently operating under a housing shortfall. Further, the proposed project would not substantially increase population in the City above what was contemplated in the City's General Plan. This would be a less-than-significant impact.

Impact 4.12-2

Displace Existing Housing. *The project site has no existing housing. Therefore, neither the project nor the development option would result in the displacement of existing housing. No impact would occur.*

The project could demolish and remove all structures on the project site. None of these structures serve as housing, as all structures are associated with former agricultural operations (i.e., greenhouses, storage sheds). The project would not result in the displacement of existing housing. Instead, the project would provide new housing in the City. No impact would occur.

4.12.3 MITIGATION MEASURES

No mitigation measures are necessary for the following no impact and less-than-significant population and housing impacts.

4.12-1:	Induce Substantial Population Growth above Planned Levels.
4.12-2:	Displace Existing Housing or Population.

4.12.4 LEVEL OF SIGNIFICANCE AFTER MITIGATION

The project's population and housing impacts (Impact 4.12-1 and 4.12-2) would be less than significant. No mitigation is required.